

SEQUENCE LISTING

<110> Rouleau, Guy A.
Lafreniere, Ronald G.
Rocheffort, Daniel

<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS THEREOF AND METHOD
USING SAME TO ASSESS, DIAGNOSE, PROGNOSIS OR TREAT EPILEPSY

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<141> 2003-09-17

<140> 09/718,355

<141> 2000-11-24

<150> 60/167,623

<151> 1999-11-26

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<170> PatentIn version 3.1

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 35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
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Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
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Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
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Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Ile Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val Asp
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
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Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Ile Gln Trp Pro Pro Thr Asn Ala Ser Leu Glu
275 280 285

Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
290 295 300

Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
305 310 315 320

Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
325 330 335

Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
340 345 350

Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
355 360 365

Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
370 375 380

Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
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Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
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Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
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Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
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485 490 495

Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
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Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
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Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
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Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
565 570 575

Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp Phe Ala Asp
580 585 590

Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
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Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe

770

775

780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
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Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
 805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
 820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
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Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
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Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
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Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
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Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
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Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
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Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
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Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
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Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
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Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
 995 1000 1005

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1025						1030					1035			
Ile	Arg	Lys	Gln	Lys	Ile	Leu	Asp	Glu	Ile	Lys	Pro	Leu	Asp	Asp
1040						1045					1050			
Leu	Asn	Asn	Lys	Lys	Asp	Ser	Cys	Met	Ser	Asn	His	Thr	Ala	Glu
1055						1060					1065			
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1070						1075					1080			
Ser	Gly	Ile	Gly	Thr	Gly	Ser	Ser	Val	Glu	Lys	Tyr	Ile	Ile	Asp
1085						1090					1095			
Glu	Ser	Asp	Tyr	Met	Ser	Phe	Ile	Asn	Asn	Pro	Ser	Leu	Thr	Val
1100						1105					1110			
Thr	Val	Pro	Ile	Ala	Val	Gly	Glu	Ser	Asp	Phe	Glu	Asn	Leu	Asn
1115						1120					1125			
Thr	Glu	Asp	Phe	Ser	Ser	Glu	Ser	Asp	Leu	Glu	Glu	Ser	Lys	Glu
1130						1135					1140			
Lys	Leu	Asn	Glu	Ser	Ser	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp
1145						1150					1155			
Ile	Gly	Ala	Pro	Val	Glu	Glu	Gln	Pro	Val	Val	Glu	Pro	Glu	Glu
1160						1165					1170			
Thr	Leu	Glu	Pro	Glu	Ala	Cys	Phe	Thr	Glu	Gly	Cys	Val	Gln	Arg
1175						1180					1185			
Phe	Lys	Cys	Cys	Gln	Ile	Asn	Val	Glu	Glu	Gly	Arg	Gly	Lys	Gln
1190						1195					1200			
Trp	Trp	Asn	Leu	Arg	Arg	Thr	Cys	Phe	Arg	Ile	Val	Glu	His	Asn
1205						1210					1215			

Trp Phe	Glu Thr Phe Ile Val	Phe Met Ile Leu Leu	Ser Ser Gly
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Ala Leu	Ala Phe Glu Asp Ile	Tyr Ile Asp Gln Arg	Lys Thr Ile
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Lys Thr	Met Leu Glu Tyr Ala	Asp Lys Val Phe Thr	Tyr Ile Phe
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Ile Leu	Glu Met Leu Leu Lys	Trp Val Ala Tyr Gly	Tyr Gln Thr
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Tyr Phe	Thr Asn Ala Trp Cys	Trp Leu Asp Phe Leu	Ile Val Asp
1280	1285	1290	
Val Ser	Leu Val Ser Leu Thr	Ala Asn Ala Leu Gly	Tyr Ser Glu
1295	1300	1305	
Leu Gly	Ala Ile Lys Ser Leu	Arg Thr Leu Arg Ala	Leu Arg Pro
1310	1315	1320	
Leu Arg	Ala Leu Ser Arg Phe	Glu Gly Met Arg Val	Val Val Asn
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Ala Leu	Leu Gly Ala Ile Pro	Ser Ile Met Asn Val	Leu Leu Val
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Cys Leu	Ile Phe Trp Leu Ile	Phe Ser Ile Met Gly	Val Asn Leu
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Phe Ala	Gly Lys Phe Tyr His	Cys Ile Asn Thr Thr	Thr Gly Asp
1370	1375	1380	
Arg Phe	Asp Ile Glu Asp Val	Asn Asn His Thr Asp	Cys Leu Lys
1385	1390	1395	
Leu Ile	Glu Arg Asn Glu Thr	Ala Arg Trp Lys Asn	Val Lys Val
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Asn Phe	Asp Asn Val Gly Phe	Gly Tyr Leu Ser Leu	Leu Gln Val
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Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp
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Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr
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Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe
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Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
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Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu
1490 1495 1500

Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys
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Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met
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Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met
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Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp
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Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu
1565 1570 1575

Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile
1580 1585 1590

Ser Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp
1595 1600 1605

Phe Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu
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Leu Ile Glu Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile
1625 1630 1635

Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala

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Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro				
1655		1660		1665
Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile				
1670		1675		1680
Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Arg Glu				
1685		1690		1695
Val Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser				
1700		1705		1710
Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly				
1715		1720		1725
Leu Leu Ala Pro Ile Leu Asn Ser Lys Pro Pro Asp Cys Asp Pro				
1730		1735		1740
Asn Lys Val Asn Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn				
1745		1750		1755
Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser				
1760		1765		1770
Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn				
1775		1780		1785
Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp				
1790		1795		1800
Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp				
1805		1810		1815
Ala Thr Gln Phe Met Glu Phe Glu Lys Leu Ser Gln Phe Ala Ala				
1820		1825		1830
Ala Leu Glu Pro Pro Leu Asn Leu Pro Gln Pro Asn Lys Leu Gln				
1835		1840		1845
Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His				
1850		1855		1860

Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu
1865 1870 1875

Ser Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe
1880 1885 1890

Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Gln Pro Ile Thr Thr
1895 1900 1905

Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Val Ile Ile Gln
1910 1915 1920

Arg Ala Tyr Arg Arg His Leu Leu Lys Arg Thr Val Lys Gln Ala
1925 1930 1935

Ser Phe Thr Tyr Asn Lys Asn Lys Ile Lys Gly Gly Ala Asn Leu
1940 1945 1950

Leu Ile Lys Glu Asp Met Ile Ile Asp Arg Ile Asn Glu Asn Ser
1955 1960 1965

Ile Thr Glu Lys Thr Asp Leu Thr Met Ser Thr Ala Ala Cys Pro
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Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
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Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
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Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys Gly
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Lys Ala Ile Phe Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
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Pro Phe Asn Pro Leu Arg Lys Ile Ala Ile Lys Ile Leu Val His Ser
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Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
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Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
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165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
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Leu Asp Phe Thr Val Ile Thr Phe Ala Phe Val Thr Glu Phe Val Asn
195 200 205

Leu Gly Asn Phe Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
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Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
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Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn

260

265

270

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Glu His Ser Ile Glu Lys Asn Ile Thr Val Asn Tyr Asn Gly Thr Leu
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Ile Asn Glu Thr Val Phe Glu Phe Asp Trp Lys Ser Tyr Ile Gln Asp
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Ser Arg Tyr His Tyr Phe Leu Glu Gly Phe Leu Asp Ala Leu Leu Cys
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Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Met Cys Val
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Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr Phe
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Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Phe Trp
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Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met
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Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Ile Asn
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Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Ile
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Glu Gln Leu Lys Lys Gln Gln Glu Ala Ala Gln Gln Ala Ala Thr Ala
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Thr Ala Ser Glu His Ser Arg Glu Pro Ser Ala Ala Gly Arg Leu Ser
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Asp Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala Lys Glu
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Arg Arg Asn Arg Arg Lys Lys Arg Lys Gln Lys Glu Gln Ser Gly Gly
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Glu Glu Lys Asp Glu Asp Glu Phe Gln Lys Ser Glu Ser Glu Asp Ser
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Ile Arg Arg Lys Gly Phe Arg Phe Ser Ile Glu Gly Asn Arg Leu Thr
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Tyr Glu Lys Arg Tyr Ser Ser Pro His Gln Ser Leu Leu Ser Ile Arg
545 550 555 560

Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Thr Ser Leu Phe Ser
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Asp Glu His Ser Thr Phe Glu Asp Asn Glu Ser Arg Arg Asp Ser Leu
595 600 605

Phe Val Pro Arg Arg His Gly Glu Arg Arg Asn Ser Asn Leu Ser Gln
610 615 620

Thr Ser Arg Ser Ser Arg Met Leu Ala Val Phe Pro Ala Asn Gly Lys
625 630 635 640

Met His Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Val Gly Gly
645 650 655

Pro Ser Val Pro Thr Ser Pro Val Gly Gln Leu Leu Pro Glu Val Ile
660 665 670

Ile Asp Lys Pro Ala Thr Asp Asp Asn Gly Thr Thr Thr Glu Thr Glu
675 680 685

Met Arg Lys Arg Arg Ser Ser Ser Phe His Val Ser Met Asp Phe Leu
690 695 700

Glu Asp Pro Ser Gln Arg Gln Arg Ala Met Ser Ile Ala Ser Ile Leu
705 710 715 720

Thr Asn Thr Val Glu Glu Leu Glu Glu Ser Arg Gln Lys Cys Pro Pro
725 730 735

Cys Trp Tyr Lys Phe Ser Asn Ile Phe Leu Ile Trp Asp Cys Ser Pro
740 745 750

Tyr Trp Leu Lys Val Lys His Val Val Asn Leu Val Val Met Asp Pro
755 760 765

Phe Val Asp Leu Ala Ile Thr Ile Cys Ile Val Leu Asn Thr Leu Phe
770 775 780

Met Ala Met Glu His Tyr Pro Met Thr Asp His Phe Asn Asn Val Leu
785 790 795 800

Thr Val Gly Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Phe
805 810 815

Leu Lys Ile Ile Ala Met Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp
820 825 830

Asn Ile Phe Asp Gly Phe Ile Val Thr Leu Ser Leu Val Glu Leu Gly
835 840 845

Leu Ala Asn Val Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu
850 855 860

Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile
865 870 875 880

Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val
885 890 895

Leu Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
900 905 910

Gly Lys Ser Tyr Lys Asp Cys Val Cys Lys Ile Ala Ser Asp Cys Gln
915 920 925

Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu Ile Val
930 935 940

Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met
945 950 955 960

Glu Val Ala Gly Gln Ala Met Cys Leu Thr Val Phe Met Met Val Met
965 970 975

Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu
980 985 990

Ser Ser Phe Ser Ala Asp Asn Leu Ala Ala Thr Asp Asp Asp Asn Glu
995 1000 1005

Met Asn Asn Leu Gln Ile Ala Val Asp Arg Met His Lys Gly Val
1010 1015 1020

Ala Tyr Val Lys Arg Lys Ile Tyr Glu Phe Ile Gln Gln Ser Phe
1025 1030 1035

Ile Arg Lys Gln Lys Ile Leu Asp Glu Ile Lys Pro Leu Asp Asp
1040 1045 1050

Leu Asn Asn Lys Lys Asp Ser Cys Met Ser Asn His Thr Ala Glu
1055 1060 1065

Ile Gly Lys Asp Leu Asp Tyr Leu Lys Asp Val Asn Gly Thr Thr
1070 1075 1080

Ser Gly Ile Gly Thr Gly Ser Ser Val Glu Lys Tyr Ile Ile Asp
1085 1090 1095

Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val
1100 1105 1110

Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn
1115 1120 1125

Thr Glu Asp Phe Ser Ser Glu Ser Asp Leu Glu Glu Ser Lys Glu
1130 1135 1140

Lys Leu Asn Glu Ser Ser Ser Ser Ser Glu Gly Ser Thr Val Asp
1145 1150 1155

Ile Gly Ala Pro Val Glu Glu Gln Pro Val Val Glu Pro Glu Glu

1160		1165		1170
Thr Leu Glu Pro Glu Ala Cys Phe Thr Glu Gly Cys Val Gln Arg				
1175		1180		1185
Phe Lys Cys Cys Gln Ile Asn Val Glu Glu Gly Arg Gly Lys Gln				
1190		1195		1200
Trp Trp Asn Leu Arg Arg Thr Cys Phe Arg Ile Val Glu His Asn				
1205		1210		1215
Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser Ser Gly				
1220		1225		1230
Ala Leu Ala Phe Glu Asp Ile Tyr Ile Asp Gln Arg Lys Thr Ile				
1235		1240		1245
Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr Ile Phe				
1250		1255		1260
Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Tyr Gln Thr				
1265		1270		1275
Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp				
1280		1285		1290
Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr Ser Glu				
1295		1300		1305
Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro				
1310		1315		1320
Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn				
1325		1330		1335
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val				
1340		1345		1350
Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu				
1355		1360		1365
Phe Ala Gly Lys Phe Tyr His Cys Ile Asn Thr Thr Thr Gly Asp				
1370		1375		1380

Arg Phe Asp Ile Glu Asp Val Asn Asn His Thr Asp Cys Leu Lys
1385 1390 1395

Leu Ile Glu Arg Asn Glu Thr Ala Arg Trp Lys Asn Val Lys Val
1400 1405 1410

Asn Phe Asp Asn Val Gly Phe Gly Tyr Leu Ser Leu Leu Gln Val
1415 1420 1425

Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp
1430 1435 1440

Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr Glu Glu Ser Leu Tyr
1445 1450 1455

Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe
1460 1465 1470

Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
1475 1480 1485

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu
1490 1495 1500

Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys
1505 1510 1515

Pro Gln Lys Pro Ile Pro Arg Pro Gly Asn Lys Phe Gln Gly Met
1520 1525 1530

Val Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met
1535 1540 1545

Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp
1550 1555 1560

Asp Gln Ser Glu Tyr Val Thr Thr Ile Leu Ser Arg Ile Asn Leu
1565 1570 1575

Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile
1580 1585 1590

Ser	Leu	Arg	His	Tyr	Tyr	Phe	Thr	Ile	Gly	Trp	Asn	Ile	Phe	Asp
1595						1600					1605			
Phe	Val	Val	Val	Ile	Leu	Ser	Ile	Val	Gly	Met	Phe	Leu	Ala	Glu
1610						1615					1620			
Leu	Ile	Glu	Lys	Tyr	Phe	Val	Ser	Pro	Thr	Leu	Phe	Arg	Val	Ile
1625						1630					1635			
Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg	Leu	Ile	Lys	Gly	Ala
1640						1645					1650			
Lys	Gly	Ile	Arg	Thr	Leu	Leu	Phe	Ala	Leu	Met	Met	Ser	Leu	Pro
1655						1660					1665			
Ala	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu	Phe	Leu	Val	Met	Phe	Ile
1670						1675					1680			
Tyr	Ala	Ile	Phe	Gly	Met	Ser	Asn	Phe	Ala	Tyr	Val	Lys	Arg	Glu
1685						1690					1695			
Val	Gly	Ile	Asp	Asp	Met	Phe	Asn	Phe	Glu	Thr	Phe	Gly	Asn	Ser
1700						1705					1710			
Met	Ile	Cys	Leu	Phe	Gln	Ile	Thr	Thr	Ser	Ala	Gly	Trp	Asp	Gly
1715						1720					1725			
Leu	Leu	Ala	Pro	Ile	Leu	Asn	Ser	Lys	Pro	Pro	Asp	Cys	Asp	Pro
1730						1735					1740			
Asn	Lys	Val	Asn	Pro	Gly	Ser	Ser	Val	Lys	Gly	Asp	Cys	Gly	Asn
1745						1750					1755			
Pro	Ser	Val	Gly	Ile	Phe	Phe	Phe	Val	Ser	Tyr	Ile	Ile	Ile	Ser
1760						1765					1770			
Phe	Leu	Val	Val	Val	Asn	Met	Tyr	Ile	Ala	Val	Ile	Leu	Glu	Asn
1775						1780					1785			
Phe	Ser	Val	Ala	Thr	Glu	Glu	Ser	Ala	Glu	Pro	Leu	Ser	Glu	Asp
1790						1795					1800			

Asp	Phe	Glu	Met	Phe	Tyr	Glu	Val	Trp	Glu	Lys	Phe	Asp	Pro	Asp
1805						1810					1815			
Ala	Thr	Gln	Phe	Met	Glu	Phe	Glu	Lys	Leu	Ser	Gln	Phe	Ala	Ala
1820						1825					1830			
Ala	Leu	Glu	Pro	Pro	Leu	Asn	Leu	Pro	Gln	Pro	Asn	Lys	Leu	Gln
1835						1840					1845			
Leu	Ile	Ala	Met	Asp	Leu	Pro	Met	Val	Ser	Gly	Asp	Arg	Ile	His
1850						1855					1860			
Cys	Leu	Asp	Ile	Leu	Phe	Ala	Phe	Thr	Lys	Arg	Val	Leu	Gly	Glu
1865						1870					1875			
Ser	Gly	Glu	Met	Asp	Ala	Leu	Arg	Ile	Gln	Met	Glu	Glu	Arg	Phe
1880						1885					1890			
Met	Ala	Ser	Asn	Pro	Ser	Lys	Val	Ser	Tyr	Gln	Pro	Ile	Thr	Thr
1895						1900					1905			
Thr	Leu	Lys	Arg	Lys	Gln	Glu	Glu	Val	Ser	Ala	Val	Ile	Ile	Gln
1910						1915					1920			
Arg	Ala	Tyr	Arg	Arg	His	Leu	Leu	Lys	Arg	Thr	Val	Lys	Gln	Ala
1925						1930					1935			
Ser	Phe	Thr	Tyr	Asn	Lys	Asn	Lys	Ile	Lys	Gly	Gly	Ala	Asn	Leu
1940						1945					1950			
Leu	Ile	Lys	Glu	Asp	Met	Ile	Ile	Asp	Arg	Ile	Asn	Glu	Asn	Ser
1955						1960					1965			
Ile	Thr	Glu	Lys	Thr	Asp	Leu	Thr	Met	Ser	Thr	Ala	Ala	Cys	Pro
1970						1975					1980			
Pro	Ser	Tyr	Asp	Arg	Val	Thr	Lys	Pro	Ile	Val	Glu	Lys	His	Glu
1985						1990					1995			
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<212> DNA

<213> Homo sapiens

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gcaaggagaa gcaatactgg gagattacag agaagaaagg aaaaaaggct gagagaaaag	180
aggttgagga agaaatcata aatctggatt gtgagaaagt gtttaatat tagccactag	240
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gaggctctct gtgcatgtgt gtatgtgtgc gtttgtgtgt gtttgtgtgt ctgtgtgttc	420
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aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttcctcac	540
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aagtttattc attccagtta ttcctttgga aaaagagtcc atggaaattc agtttgggca	660
gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct	720
cctcttcttg tccccctccc cgcgcctcc tctctcaacc ttccatgaac tgaaatcagg	780
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catctggcca	850

<210> 6

<211> 483

<212> DNA

<213> Homo sapiens

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caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca	180
ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg	240
cccaaagcaa atagtgaactt ggaagctgga aagaaccttc catttattta tggagacatt	300
cctccagaga tgggtgtcaga gccctggag gacctggacc cctactatat caataagaaa	360
gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggac	420
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483

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<211> 497
<212> DNA
<213> Homo sapiens

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agtttaagtg gtttatactt tcatacttct atgttggtgtt cctgtcttac agacttttat 180
agtattgaat aaaggggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt 240
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ttcaagtgat taatattaac ttttgtaca tgatctgtaa gcactttata gctaaatata 360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcactcttg 420
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<211> 501
<212> DNA
<213> Homo sapiens

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tatccctgaa ttttggttaa gctgcagttt gggcttttca atgttagctt tttgtaatat 180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca 240
tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg 300
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gattytgaaa ctgtgtctta atgtagtctt aaaataaaac tgaagagcat tttattaaag 420
tcattcctag acaaaattac gcagcaagag gacaatgctc attggccctc aggctgctg 480
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<210> 9
<211> 563
<212> DNA

<213> Homo sapiens

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aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataa	180
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cagatacacc ttcacaggaa tatatacttt tgaatcactt ataaaaatta ttgcaagggg	300
attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttcactgt	360
cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggttttcc	420
atcagtgtt atgcttttaa gaataggtt gctttacctg tagaatattt ttgtgtgatt	480
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<210> 10

<211> 253

<212> DNA

<213> Homo sapiens

<400> 10

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agtcttgaga gctttgaaaa ctatttcggt aattccaggt aagaagtgat tagagtaaag	180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa	240
ctcccgctta cag	253

<210> 11

<211> 340

<212> DNA

<213> Homo sapiens

<400> 11

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ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc	180
attccaggtg agagcaaggt tagataatga gacggacca tcatgtgatt cagcatcctt	240
ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggt gttcaaagaa	300

atgattatta tgttagacat agcttatcag cctggagtta 340

<210> 12
<211> 409
<212> DNA
<213> Homo sapiens

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<210> 13
<211> 266
<212> DNA
<213> Homo sapiens

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cgactttctt ttttcaaaca ggatattcatt atttcctgga gggtttttta gatgcactac 180
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<210> 14
<211> 604
<212> DNA
<213> Homo sapiens

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gaaatagatt agttacttat ttgtcaaact tttattttga aataccaaat ctttctgact 180
aggcaatatc atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
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cccaattatg gctacacaag ctttgatacc ttcagttggg cttttttgtc cttgtttcga	360
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tcaa	604

<210> 15
 <211> 378
 <212> DNA
 <213> Homo sapiens

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<210> 16
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 <212> DNA
 <213> Homo sapiens

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aactgaatca accactgttg tgttatatct aaacccatcc cttcttcaca tagttatgca	780
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tgaca	845

<210> 17
 <211> 965
 <212> DNA
 <213> Homo sapiens

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taatcccaag ggctagaaac tttctttttat caaggtaatt taatttaatg tgaatgcaca	180
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<210> 18
 <211> 641

<212> DNA

<213> Homo sapiens

<400> 18

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atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca	180
tgtgtttcat gaaattcact gtgtcaccat ttggttggtt gcttgtcata ttgctcaa	240
taattgttta atgcattagc attttttttt acaggggaaca accactgaaa ctgaaatgag	300
aaagagaagg tcaagttctt tccacgtttc catggacttt ctagaagatc cttcccaa	360
gcaacgagca atgagtatag ccagcattct aacaaataca gtagaagggt ggtaacaa	420
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cttatatcta ctcatatatt ctagaagcct taacaattta ttttaaaatg agtgatatt	600
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<210> 19

<211> 818

<212> DNA

<213> Homo sapiens

<400> 19

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ataaccttg gaggtttaga gtaaactgta atttttttta caagtacaaa aaaggggtgc	180
tctgtaacaa aaatgtgttg attactgaaa ataagtttag tggatatga ataatgtgt	240
gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaactgaa	300
gaatccaggc agaaatgccc accctgttg tataaatttt ccaacatatt cttaatctgg	360
gactgttctc catattggtt aaaagtgaac catgttgtca acctggttgt gatggacca	420
tttggtgacc tggccatcac catctgtatt gtcttaaata ctcttttcat ggccatggag	480
cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata	540
ttggaaggta aatgtgttta gtcttcaaat tttctgcttg aaaaactgtt tacattta	600
tgtgtatagc agtctttcaa ccctcttca tgcttcttgg cccctgcaaa atcgcaatta	660
tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcaca	720

aaactgagaa aggcataaggc ctacagcact acttgaaaag tcaacagcaa tatttataat	780
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<210> 20
 <211> 645
 <212> DNA
 <213> Homo sapiens

<400> 20	
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aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata	180
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taattttgtt ttgatcttag gttttcactg ggatctttac agcagaaatg tttctgaaaa	300
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ttgtgacgt tagcctggta gaacttggac tcgccaatgt ggaagggtta tctgttctcc	420
gttcatttcg attggtaaaa aaaaaaaaaa aaggaaacaa attcaaaaac ctttctaaca	480
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agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt	600
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<210> 21
 <211> 829
 <212> DNA
 <213> Homo sapiens

<400> 21	
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aacgttaaat atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac	180
cctogtcttg gccatcatcg tcttcatttt tgccgtggtc ggcattgcagc tctttggtaa	240
aagctacaaa gatttgtgtc gcaagatcgc cagtgtgtgt caactccac gctggcacat	300
gaatgacttc ttccactcck hcttgattgt gttccgcgtg ctgtgtgggg agtggataga	360
gaccatgtgg gactgtatgg aggttgctgg tcaagccatg tgccttactg tcttcatgat	420
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aaacttaaag tataataaaa aaaaagagta taatttaatg gtgactgttt tgtcaaaaag	600
aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttta	660
caacacagca atatabcagt gcccctgcat tttttatacc aaattctatt ttgtcagtca	720
ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg	780
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<210> 22
 <211> 909
 <212> DNA
 <213> Homo sapiens

<400> 22	
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agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca	180
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tccacactta aaagaaagaa taagtgattg taatctgctc ttccctacat tgggtgtaaaa	300
ttataatcat gtttttggtg tttttaaggc cctgaatctc tttctggcct tgcttctgag	360
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aattgctgtg gataggatgc acaaaggagt agcttatgtg aaaagaaaaa tatatgarkt	480
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tacttaaga	909

<210> 23
 <211> 516
 <212> DNA
 <213> Homo sapiens

<220>

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 <223> n = a, c, t or g

<220>
 <221> misc_feature
 <222> (415)..(451)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (454)..(454)
 <223> N = a, c, t or g

<220>
 <221> misc_feature
 <222> (513)..(513)
 <223> n = a, c, t or g

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 ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggttagca 240
 ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg 300
 aaccgaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
 gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
 ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaaa cttaaagtct 480
 agtgtcatgc tttgattata tctgccaat atntgg 516

<210> 24
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 24
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 gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
 acactttctg caggctgtgt acaaagattc aagtgttgtc aatcaatgt ggaagaaggc 240

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gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt	540
taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca	600
gcttattcat taacaccaaa ggatgtgaat attcaattac	640

<210> 25
 <211> 607
 <212> DNA
 <213> Homo sapiens

<400> 25	
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ttgcgaggaa aaaaaaaaaag taacagtaac tactgtttct ctgccctcct attccaatga	180
aatgtcatat gcatatgatt aattttttta atagcttatg gagtataatt atttttgaaa	240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa	300
agacgattaa gacgatgttg gaatatgctg acaaggtttt cacttacatt ttcattctgg	360
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ggctggactt cttaattggt gatgtaggta tcgttcatat ttttgtctct gttcaaggta	480
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gggctaa	607

<210> 26
 <211> 336
 <212> DNA
 <213> Homo sapiens

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ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag	180
agccttatct cgatttgaag ggatgagggt aagaaaaatg aaagaacctg aagtattgta	240

tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaag	300
gaatggcaaa ttcttgcaaa atgctcttta ttgttt	336

<210> 27
 <211> 677
 <212> DNA
 <213> Homo sapiens

<400> 27	
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aaagaatgga aagaccagag attactaggg gaattttttt tctttattaa cagataagaa	180
ttctgacttt tctttttttc catttggtga ttaggtgggt gtgaatgcc ttttaggagc	240
aattccatcc atcatgaatg tgcttctggg ttgtcttata ttctggctaa ttttcagcat	300
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<210> 28
 <211> 457
 <212> DNA
 <213> Homo sapiens

<400> 28	
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attatatcag taagaatatt tattaacat cagggtctaaa ttatttttac tccaaagtaa	180
aacatgcatg tccttcttaa taggccacat tcaaaggatg gatggatata atgtatgcag	240
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aaaatatttg ggaaaaagtg tgacaggtaa atattcaagc atagcaatgt ttatcagaaa	420

gatcttacta agataattca acacatgaat tatttttg

457

<210> 29
<211> 379
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (43)..(43)
<223> n = a, c, t or g

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tggtaggtgg aactccagcc taagtatgaa gaaagtctgt acatgtatct ttactttggt 180
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gaaaaattat tccttggagt gttttctctg ccaaattgagt acttgaattt agaacaaatg 360
ggagtatata ttataactg 379

<210> 30
<211> 393
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<213> Homo sapiens

<400> 30
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gccatccatt ttctatttta acattgaaaa aatgtacaa aaggacacag ttttaaccag 180
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ccaggagtaa gaagtatcaa atgatatggg ggaaaataca aaaacaaaaa ctgcatgctt 360
gtctcacaaa aaagaaaagt aagctaaaca ttt 393

<210> 31
<211> 539
<212> DNA
<213> Homo sapiens

<400> 31

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aactcctttg ttgttaaaaag cattttctatt tctctacaga acaaatttca aggaatggtc	180
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aaacaatcaa gattagattc aagatcatcc cagcaatcag agataatcac tgtaaatat	539

<210> 32
 <211> 3403
 <212> DNA
 <213> Homo sapiens

<400> 32	
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attctcattg tttattcata ggtatgttcc ttgccgagct gatagaaaag tatttcgtgt	180
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 <211> 8349
 <212> DNA
 <213> Homo sapiens

<400> 33						
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ggattgcagt	tgttcatggg	caacctacga	aataaatgtt	tgcaatggcc	tccagataat	960
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gatcctctc ttctcatagc aaaaccaaac aaagtccagc tcattgccat ggatctgccc	5640
atggtgagtg gtgaccggat ccactgtctt gacatcttat ttgcttttac aaagcgtgtt	5700
ttgggtgaga gtggagagat ggatgccctt cgaatacaga tggaagagcg attcatggca	5760
tcaaaccctt ccaaagtctc ttatgagccc attacgacca cgttgaaacg caaacaagag	5820

gaggtgtctg ctattattat ccagagggct tacagacgct acctcttgaa gcaaaaagtt	5880
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aaagaagata ctctcattga taaactgaat gagaattcaa ctccagagaa aaccgatatg	6000
acgccttcca ccacgtctcc accctcgat gatagtgtga ccaaaccaga aaaagaaaaa	6060
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ccatagaatc acaagcatta aagagttggt ttattttttac ataaccatt aaatgtacat	6900
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gcctgaattg accaaaaaac atccccacca ccactttata aagttgattc tgctttatcc	7140
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<400> 35

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Phe	Thr	Arg	Glu	Ser	Leu	Ala	Ala	Ile	Glu	Gln	Arg	Ile	Ala	Glu	Glu
			20					25					30		

Lys	Ala	Lys	Arg	Pro	Lys	Gln	Glu	Arg	Lys	Asp	Glu	Asp	Asp	Glu	Asn
		35					40					45			

Gly	Pro	Lys	Pro	Asn	Ser	Asp	Leu	Glu	Ala	Gly	Lys	Ser	Leu	Pro	Phe
	50					55					60				

Ile	Tyr	Gly	Asp	Ile	Pro	Pro	Glu	Met	Val	Ser	Val	Pro	Leu	Glu	Asp
65					70					75				80	

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
100 105 110

Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
115 120 125

Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
275 280 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile

305

310

315

320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
 325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
 340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
 355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
 370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
 385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
 405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
 420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
 435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
 450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
 465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
 485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
 500 505 510

Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
 515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
 530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
705 710 715 720

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys
725 730 735

Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val
740 745 750

Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
755 760 765

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
770 775 780

Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly
785 790 795 800

Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr
805 810 815

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser
820 825 830

Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val
835 840 845

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
850 855 860

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
865 870 875 880

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
885 890 895

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
900 905 910

Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe
915 920 925

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
930 935 940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
1010 1015 1020

Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
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Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
1040 1045 1050

Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
1055 1060 1065

Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
1085 1090 1095

Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
1100 1105 1110

Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
1145 1150 1155

Val Glu Pro Glu Glu Ser Leu Glu Pro Glu Ala Cys Phe Thr Glu
1160 1165 1170

Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile Ser Ile Glu Glu
1175 1180 1185

Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr Cys Tyr Lys
1190 1195 1200

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile

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1220		1225		1230
Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val				
1235		1240		1245
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala				
1250		1255		1260
Tyr Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp				
1265		1270		1275
Phe Leu Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala				
1280		1285		1290
Leu Gly Tyr Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu				
1295		1300		1305
Arg Ala Leu Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met				
1310		1315		1320
Arg Ala Val Val Asn Ala Leu Leu Gly Ala Ile Pro Ser Ile Met				
1325		1330		1335
Asn Val Leu Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile				
1340		1345		1350
Met Gly Val Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Ile Asn				
1355		1360		1365
Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr				
1370		1375		1380
Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp				
1385		1390		1395
Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu				
1400		1405		1410
Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met				
1415		1420		1425

Tyr	Ala	Ala	Val	Asp	Ser	Arg	Asn	Val	Glu	Leu	Gln	Pro	Lys	Tyr
1430						1435					1440			
Glu	Asp	Asn	Leu	Tyr	Met	Tyr	Leu	Tyr	Phe	Val	Ile	Phe	Ile	Ile
1445						1450					1455			
Phe	Gly	Ser	Phe	Phe	Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile
1460						1465					1470			
Asp	Asn	Phe	Asn	Gln	Gln	Lys	Lys	Lys	Phe	Gly	Gly	Gln	Asp	Ile
1475						1480					1485			
Phe	Met	Thr	Glu	Glu	Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys
1490						1495					1500			
Leu	Gly	Ser	Lys	Lys	Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Ala	Asn
1505						1510					1515			
Lys	Phe	Gln	Gly	Met	Val	Phe	Asp	Phe	Val	Thr	Lys	Gln	Val	Phe
1520						1525					1530			
Asp	Ile	Ser	Ile	Met	Ile	Leu	Ile	Cys	Leu	Asn	Met	Val	Thr	Met
1535						1540					1545			
Met	Val	Glu	Thr	Asp	Asp	Gln	Ser	Gln	Glu	Met	Thr	Asn	Ile	Leu
1550						1555					1560			
Tyr	Trp	Ile	Asn	Leu	Val	Phe	Ile	Val	Leu	Phe	Thr	Gly	Glu	Cys
1565						1570					1575			
Val	Leu	Lys	Leu	Ile	Ser	Leu	Arg	Tyr	Tyr	Tyr	Phe	Thr	Ile	Gly
1580						1585					1590			
Trp	Asn	Ile	Phe	Asp	Phe	Val	Val	Val	Ile	Leu	Ser	Ile	Val	Gly
1595						1600					1605			
Met	Phe	Leu	Ala	Glu	Leu	Ile	Glu	Lys	Tyr	Phe	Val	Ser	Pro	Thr
1610						1615					1620			
Leu	Phe	Arg	Val	Ile	Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg
1625						1630					1635			

Leu Ile	Lys Gly	Ala Lys	Gly Ile	Arg Thr	Leu Leu	Phe Ala	Leu
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Met Met	Ser Leu	Pro Ala	Leu Phe	Asn Ile	Gly Leu	Leu Leu	Phe
1655			1660			1665	
Leu Val	Met Phe	Ile Tyr	Ala Ile	Phe Gly	Met Ser	Asn Phe	Ala
1670			1675			1680	
Tyr Val	Lys Arg	Glu Val	Gly Ile	Asp Asp	Met Phe	Asn Phe	Glu
1685			1690			1695	
Thr Phe	Gly Asn	Ser Met	Ile Cys	Leu Phe	Gln Ile	Thr Thr	Ser
1700			1705			1710	
Ala Gly	Trp Asp	Gly Leu	Leu Ala	Pro Ile	Leu Asn	Ser Gly	Pro
1715			1720			1725	
Pro Asp	Cys Asp	Pro Asp	Lys Asp	His Pro	Gly Ser	Ser Val	Lys
1730			1735			1740	
Gly Asp	Cys Gly	Asn Pro	Ser Val	Gly Ile	Phe Phe	Phe Val	Ser
1745			1750			1755	
Tyr Ile	Ile Ile	Ser Phe	Leu Val	Val Val	Asn Met	Tyr Ile	Ala
1760			1765			1770	
Val Ile	Leu Glu	Asn Phe	Ser Val	Ala Thr	Glu Glu	Ser Ala	Glu
1775			1780			1785	
Pro Leu	Ser Glu	Asp Asp	Phe Glu	Met Phe	Tyr Glu	Val Trp	Glu
1790			1795			1800	
Lys Phe	Asp Pro	Asp Ala	Thr Gln	Phe Ile	Glu Phe	Ala Lys	Leu
1805			1810			1815	
Ser Asp	Phe Ala	Asp Ala	Leu Asp	Pro Pro	Leu Leu	Ile Ala	Lys
1820			1825			1830	
Pro Asn	Lys Val	Gln Leu	Ile Ala	Met Asp	Leu Pro	Met Val	Ser
1835			1840			1845	

Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys
1850 1855 1860

Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1865 1870 1875

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr
1880 1885 1890

Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser
1895 1900 1905

Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln
1910 1915 1920

Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys
1925 1930 1935

Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys
1940 1945 1950

Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

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1985 1990 1995

Asp Ile Arg Glu Ser Lys Lys
2000 2005

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<400> 36

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Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
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Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
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Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu
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Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His
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Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val
130 135 140

Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr
145 150 155 160

Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala
165 170 175

Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn
180 185 190

Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val
195 200 205

Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala
210 215 220

Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala
225 230 235 240

Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
245 250 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly
260 265 270

Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe
275 280 285

Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly
290 295 300

Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile
305 310 315 320

Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu
325 330 335

Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile
340 345 350

Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp
355 360 365

Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp
370 375 380

Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr
385 390 395 400

Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu
405 410 415

Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn
420 425 430

Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln
435 440 445

Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala
450 455 460

Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile
465 470 475 480

Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys
485 490 495

Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu
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Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser
515 520 525

Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser
530 535 540

Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu
545 550 555 560

Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser
565 570 575

Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp
580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg
595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn
610 615 620

Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met
625 630 635 640

Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu
645 650 655

Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu
660 665 670

Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr
675 680 685

His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala
690 695 700

Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu

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Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys						
		725		730		735
Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val						
		740		745		750
Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys						
		755		760		765
Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr						
		770		775		780
Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly						
		785		790		800
Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr						
		805		810		815
Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser						
		820		825		830
Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val						
		835		840		845
Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp						
		850		855		860
Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala						
		865		870		875
Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala						
		885		890		895
Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys						
		900		905		910
Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe						
		915		920		925
Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile						
		930		935		940

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
945 950 955 960

Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn
965 970 975

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
980 985 990

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
995 1000 1005

Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu
1010 1015 1020

Phe Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu
1025 1030 1035

Ile Lys Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile
1040 1045 1050

Ser Asn His Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu
1055 1060 1065

Lys Asp Gly Asn Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu
1070 1075 1080

Lys Tyr Val Val Asp Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn
1085 1090 1095

Pro Ser Leu Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp
1100 1105 1110

Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Asp Met
1115 1120 1125

Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly
1130 1135 1140

Ser Thr Val Asp Ile Gly Ala Pro Ala Glu Gly Glu Gln Pro Glu
1145 1150 1155

Val Glu	Pro Glu	Glu Ser	Leu	Glu Pro	Glu Ala	Cys	Phe Thr	Glu	
1160			1165			1170			
Asp Cys	Val Arg	Lys Phe	Lys	Cys Cys	Gln Ile	Ser	Ile Glu	Glu	
1175			1180			1185			
Gly Lys	Gly Lys	Leu Trp	Trp	Asn Leu	Arg Lys	Thr	Cys Tyr	Lys	
1190			1195			1200			
Ile Val	Glu His	Asn Trp	Phe	Glu Thr	Phe Ile	Val	Phe Met	Ile	
1205			1210			1215			
Leu Leu	Ser Ser	Gly Ala	Leu	Ala Phe	Glu Asp	Ile	Tyr Ile	Glu	
1220			1225			1230			
Gln Arg	Lys Thr	Ile Lys	Thr	Met Leu	Glu Tyr	Ala	Asp Lys	Val	
1235			1240			1245			
Phe Thr	Tyr Ile	Phe Ile	Leu	Glu Met	Leu Leu	Lys	Trp Val	Ala	
1250			1255			1260			
Tyr Gly	Phe Gln	Val Tyr	Phe	Thr Asn	Ala Trp	Cys	Trp Leu	Asp	
1265			1270			1275			
Phe Leu	Ile Val	Asp Val	Ser	Leu Val	Ser Leu	Thr	Ala Asn	Ala	
1280			1285			1290			
Leu Gly	Tyr Ser	Glu Leu	Gly	Ala Ile	Lys Ser	Leu	Arg Thr	Leu	
1295			1300			1305			
Arg Ala	Leu Arg	Pro Leu	Arg	Ala Leu	Ser Arg	Phe	Glu Gly	Met	
1310			1315			1320			
Arg Ala	Val Val	Asn Ala	Leu	Leu Gly	Ala Ile	Pro	Ser Ile	Met	
1325			1330			1335			
Asn Val	Leu Leu	Val Cys	Leu	Ile Phe	Trp Leu	Ile	Phe Ser	Ile	
1340			1345			1350			
Met Gly	Val Asn	Leu Phe	Ala	Gly Lys	Phe Tyr	His	Cys Ile	Asn	
1355			1360			1365			

Tyr Thr Thr Gly Glu Met Phe Asp Val Ser Val Val Asn Asn Tyr
1370 1375 1380

Ser Glu Cys Lys Ala Leu Ile Glu Ser Asn Gln Thr Ala Arg Trp
1385 1390 1395

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Leu Gly Tyr Leu
1400 1405 1410

Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met
1415 1420 1425

Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln Pro Lys Tyr
1430 1435 1440

Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile
1445 1450 1455

Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile
1460 1465 1470

Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile
1475 1480 1485

Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys
1490 1495 1500

Leu Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn
1505 1510 1515

Lys Phe Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe
1520 1525 1530

Asp Ile Ser Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met
1535 1540 1545

Met Val Glu Thr Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu
1550 1555 1560

Tyr Trp Ile Asn Leu Val Phe Ile Val Leu Phe Thr Gly Glu Cys
1565 1570 1575

Val Leu Lys Leu Ile Ser Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly

1580	1585	1590
Trp Asn Ile Phe Asp Phe Val 1595	Val Val Ile Leu Ser 1600	Ile Val Gly 1605
Met Phe Leu Ala Glu Leu Ile 1610	Glu Lys Tyr Phe Val 1615	Ser Pro Thr 1620
Leu Phe Arg Val Ile Arg Leu 1625	Ala Arg Ile Gly Arg 1630	Ile Leu Arg 1635
Leu Ile Lys Gly Ala Lys Gly 1640	Ile Arg Thr Leu Leu 1645	Phe Ala Leu 1650
Met Met Ser Leu Pro Ala Leu 1655	Phe Asn Ile Gly Leu 1660	Leu Leu Phe 1665
Leu Val Met Phe Ile Tyr Ala 1670	Ile Phe Gly Met Ser 1675	Asn Phe Ala 1680
Tyr Val Lys Arg Glu Val Gly 1685	Ile Asp Asp Met Phe 1690	Asn Phe Glu 1695
Thr Phe Gly Asn Ser Met Ile 1700	Cys Leu Phe Gln Ile 1705	Thr Thr Ser 1710
Ala Gly Trp Asp Gly Leu Leu 1715	Ala Pro Ile Leu Asn 1720	Ser Gly Pro 1725
Pro Asp Cys Asp Pro Asp Lys 1730	Asp His Pro Gly Ser 1735	Ser Val Lys 1740
Gly Asp Cys Gly Asn Pro Ser 1745	Val Gly Ile Phe Phe 1750	Phe Val Ser 1755
Tyr Ile Ile Ile Ser Phe Leu 1760	Val Val Val Asn Met 1765	Tyr Ile Ala 1770
Val Ile Leu Glu Asn Phe Ser 1775	Val Ala Thr Glu Glu 1780	Ser Ala Glu 1785
Pro Leu Ser Glu Asp Asp Phe 1790	Glu Met Phe Tyr Glu 1795	Val Trp Glu 1800

Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu
1805 1810 1815

Ser Asp Phe Ala Asp Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys
1820 1825 1830

Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser
1835 1840 1845

Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys
1850 1855 1860

Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
1865 1870 1875

Met Glu Glu Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr
1880 1885 1890

Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser
1895 1900 1905

Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu Leu Lys Gln
1910 1915 1920

Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys Gly Lys
1925 1930 1935

Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp Lys
1940 1945 1950

Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys
1970 1975 1980

Glu Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys
1985 1990 1995

Asp Ile Arg Glu Ser Lys Lys
2000 2005

<210> 37
 <211> 912
 <212> DNA
 <213> Homo sapiens

<400> 37
 gaattcttta tatgggttga atgactttct gacatagcaa ataaaaagca tgaggagaag 60
 cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatgtt tcgttccaag 120
 aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
 tgtgtgtacg ctgtgaaggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
 ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
 cctttttacag gaagtttaggt gtggtctttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
 aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
 agcttatcaa tcccaaactc tgggggtaaa agattctaca ggggtaatgt tttattattc 480
 ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
 atctgcagag ggaccacttt catTTTgaag ctgctggctg catgttttag catgtctctt 600
 ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
 ctatgtctgt cgctaggcat gagggctctc aggaatgggt gaaaaaatg agggatgttt 720
 tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctggtt 780
 tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
 ctgttttatc tgggtgtatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
 gcattccata ta 912

<210> 38
 <211> 722
 <212> DNA
 <213> Homo sapiens

<400> 38
 ctcagtgcac gtaactgaca caatcacctc tatctaattg tcatgcttct tacctcctgt 60
 tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
 ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
 ccttgctgct attgaacaac gcattgcaga agagaaagct aagagacca aacaggaacg 240
 caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaatc 300
 tcttccattt atttatggag acattcctcc agagatggtg tcagtgcccc tggaggatct 360

ggacccttac tatatcaata agaaagtgag ttcttagtca agttgccttc actgcctatt	420
tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctccttcct	480
ctgtctaaag tatcactaag atgctggatg ggcctgaccg tgtaatggac caatgatcct	540
agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactggtg	600
aggcatcctc cagcgcggga attaaggaag gacaaaagcc tattcacctt cttgaataca	660
aatttatatgc ttaaaccagt gtaaattgac cctgattccc taataatggt gagaagcaaa	720
aa	722

<210> 39
 <211> 561
 <212> DNA
 <213> Homo sapiens

<400> 39	
cctatggcat tgatcacaaa ttttcttaat aatcctcatg tcatttatca aatttaggaa	60
agtttatagt gtcagaaaa aaaaagcatc tatcttcatg tcatatgatg gtaattatta	120
tggtatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa	180
tattcttaat atatattcta agttttgttt tatgtgttgt gttttctttt tcagacgttt	240
atagtattga ataaaggga agcaatctct cgattcagtg ccaccctgc cctttacatt	300
ttaactcct tcaaccctat tagaaaatta gctattaaga ttttggtaca ttcatatcct	360
ttttcaaadc gtcacttaat atgattttct tctttgacca agttattgag ctacacattt	420
tccaaaatat ctgtggttgg caatgttatg tggtctttct ttttctttcc ttttactcaa	480
tcgttagcat gttgcaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa	540
gtgtttcttc tctaccaac t	561

<210> 40
 <211> 510
 <212> DNA
 <213> Homo sapiens

<400> 40	
acctaaatag cctcaaaata gttgatggct tggcctgaag acaagatcta aatatgaggt	60
tgctgagtta tagaatggc aaaaaaagg gtcaataata gaataataag caacaaaata	120
atagtaagca ctaaagtttt aaacttcatg gtggtgaagg catggtagtg cataaaagta	180
agatttttcc attgaacttt gtcttccttg acgatattct actttattca atatgctcat	240

tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac	300
aaagaatgtg gagtaagtat aaatattttt caatattgac ctccctttat gtttcatatt	360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta	420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagcttgtag	480
tgggctcact tagttgtgta aattactgca	510

<210> 41
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (293)..(293)
 <223> n= a, c, t or g

<400> 41	
taagatatgt acttgtaaatt taaccactag atttttaatg tgagcttggc tattgtctct	60
caggtatacc ttacaggaa ttatacttt tgaatcactt attaaaatac ttgcaagggg	120
cttttgttta gaagatttca cttttttacg ggatccatgg aattggttgg atttcacagt	180
cattactttt gcgtaagtat ctttaatacat tttctatcct ggaagagtaa atcactgggtg	240
ggagcctata ctatattttc cttggtggct tgccttgaca gaccaagcat ttntcttagt	300
aatcatagtt ttcttccaat caaattatcc agtttggaga aattaggaac tatcatagta	360
aattacatgg	370

<210> 42
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (133)..(133)
 <223> n = a, c, t or g

<400> 42	
caattagcac tgtaaagtaa taaagtttcc caaataacag agattatgat tgatgacaat	60
gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg	120
atgaaagacc aangaagacg tagatttccc taaattctga ataactctga tttaattcta	180
caggtatgta acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt	240

cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataagggtg	300
taggccccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc	360
cctattacag	370

<210> 43
 <211> 410
 <212> DNA
 <213> Homo sapiens

<400> 43	
gtaagaagaa aatggtataa ggtggtaggc cccttatatc tccaactgtt tcttgtgttc	60
tgtcattgtg tttgtgtgtg aacccccctat tacagatatg tgacagagtt tgtggacctg	120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc	180
attccagggtg agagctaggt taaacaccga ggctgacttt agctacagtg gtgctacaat	240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa	300
gcaagaattg gtacatcatt ttttgatgg atttgattct ttgcttttta cccgttgctt	360
tctttaaaac tattctaaat cagcctttga gtttaacaag tgttgcatga	410

<210> 44
 <211> 1066
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (229)..(229)
 <223> n = a, c, t or g

<400> 44	
aaagagtgtt tggaaataca catttggttc atttccattc acagttttct aatgaacata	60
caagttctgc tttcattcat tttcaccagc tagtaggctt ttcattgaaa tgttattcaa	120
tcacaaacat taaactaata ttgttggtcat tctgcatgac atttttattt tccaggccaa	180
gctcatgata tttttgccgg taaaatagct gttgagtagt atatttaant tcccccttct	240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct	300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgcgctaa taggattgca	360
gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt	420
tgaaataaat atcacttcct tctttaacaa ttcattggat gggaatggta ctactttcaa	480

taggacagtg agcatattta actgggatga atatattgag gataaaagta agatatactc	540
tataaaccat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat	600
ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa	660
agagatatca aaggatacct tattctatctt ttsttatctg tccattgata tagtaaaagt	720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata	780
ttaaaaaagg tttatttggt agacattaat cagggttttc agtcatttta ataaataagt	840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa	900
taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa	960
ctagagaaac ctttatcaa gatgaaataa gaatttgtgt gtcctcaga aggttaagta	1020
accctgattt agccattcac ttcattccata ttctaattag tccctt	1066

<210> 45
 <211> 385
 <212> DNA
 <213> Homo sapiens

<400> 45	
gttcaattat tgtgaaaaat cttcttttagc catatatatt tattagttta tccatctcat	60
tatgattgaa aacatttgtg agctttgcc aataaacagg gtggctgaag tgttttacag	120
gattttaatg attctttcta ttctttctc tttaaataagg tcacttttat tttttacagg	180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct	240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccaactcatcc	300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacggtg actctcagaa	360
tgaccaggat aagtgtagat tctca	385

<210> 46
 <211> 430
 <212> DNA
 <213> Homo sapiens

<400> 46	
tataataatg acaattatga atcacagagg aatccacaaa gtagacctta tagattctgt	60
cattatataa atcagtccac ttagtgctga gttaagtact gggtaagggtg agagaaatcg	120
gcttttttct agtgctgtga taaaacagac attggcatat attaaaacag gaaaaccaat	180
tagcagactt gccgttattg actycctctc ttctctctaa cctaattaca gccagtgtcc	240
tgaaggatac atctgtgtga aggctggtag aaacccaac tatggctaca cgagctttga	300

caccttttagt tgggcctttt tgtccttatt tcgtctcatg actcaagact tctgggaaaa	360
cctttatcaa ctggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac	420
tcaagagaat	430

<210> 47
 <211> 646
 <212> DNA
 <213> Homo sapiens

<400> 47	
tgctgtagaa tattttatta cttagagtgt aagtttgtaa catcctatat aaaattttatt	60
aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt	120
ttgtgctgggt cattttcttg ggctcattct atctaataaa tttgatcttg gctgtggtgg	180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg	240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagttaa	300
caagcatacg gtcctttggt tttctgtatc taaattcttt aacctaaatg ttgaggtcag	360
tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgtc aggagcctgt	420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa	480
tggcatcaaa aaatggataa ttataattgc tttactgaca tttttttctc ccttgtgact	540
ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgcag agtagataaa	600
cctacatgtc ctcagttgaa gtattttctt aggggaagag gaattc	646

<210> 48
 <211> 711
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (164)..(164)
 <223> n = a, c, t or g

<400> 48	
tatgtatcat cttccatatg aatgcgcatt ttactctttg attggtctaa taacagtgta	60
ctgtgttcta aaacacagaa taaaatggag aattgttttt caagattatc ttcattgat	120
tgaagctcaa ttaagcagta acatgataat tattttttta gatnatatgc aacttccac	180
atacttttgcg cccttctagg cggcagctgc agccgcattc gctgaatcaa gagacttcag	240

tggtgctggt gggataggag ttttttcaga gagttcttca gtagcatcta agttgagctc	300
caaaagtga aaagagctga aaaacagaag aaagaaaaag aaacagaaag aacagtctgg	360
agaagaagag aaaaatgaca gagtcctaaa atcggaatct gaagacagca taagaagaaa	420
aggtttccgt ttttccttgg aaggaagtag gctgacatat gaaaagagat tttcttctcc	480
acaccaggta aaaatattaa attacatgaa ttgtgttctc ataaattttt taaaagaata	540
tgccagaatt taatggagag aaaaccgcct tccacctgga tggcacaatg ctttcagagt	600
agtgatgatt atcaagtgtt ttggctatca cttcagagaa tttgtgagtt ttgcaacttt	660
ttggaatccc aggaaggaaa ttttagatcc ctctgggttt ggaaaaattt g	711

<210> 49

<211> 1026

<212> DNA

<213> Homo sapiens

<400> 49

ttatggggac acttctgact atgttgaggt gtgggtaaag taggagaaaa gagagcagaa	60
gatggaaaat ggaggaagga gaaaaagcga gagtgaata gaaaaggatga accttgtaga	120
aagtgccaaa atgccaccag cagtcatcag aggggtgctt tcttccacat gtccaatgac	180
ttatccttga gtaagtcaat gactatgaca caatgaatca aattctgttt ttcagaatgc	240
cagctcttaa ctctcttcat ctcatttttg tttcttttct tgttattcat agtccttact	300
gagcatccgt ggctcccttt tctctccaag acgcaacagt agggcgagcc ttttcagctt	360
cagaggtcga gcaaaggaca ttggctctga gaatgacttt gctgatgatg agcacagcac	420
ctttgaggac aatgacagcc gaagagactc tctgttcgtg ccgcacagac atggagaacg	480
gcgccacagc aatgtcagcc aggccagccg tgccctcagg gtgctcccca tcctgcccac	540
gaatgggaag atgcatagcg ctgtggactg caatggtgtg gtctccctgg tcgggggccc	600
ttctaccctc acatctgctg ggcagctcct accagagggtg aggccaaacy magattgcag	660
ctgatgtgaa gagagttgtg actggtgcag gcaggagtgy ttttccattt mcacatctaa	720
gaatttkttg agtttsttgc ccaaaggctg ggagtttggt caatcaagct gttaactgtc	780
ttgtgaaact sttctattca gacttitycta caaagtaatt aaaaacctag gttggctgtc	840
agagaatata attagamgtm atctttcatc ayyattacta tggatgaaa ctcgccaaaa	900
agcaaagcaa caatttatca agcataatgt tygaytaata tagttaaatt aaatccaagg	960
aaattaatgc tcacaaatta aataaatact taaggatttt gtgattgttg ttcatttaaa	1020

<210> 50
 <211> 601
 <212> DNA
 <213> Homo sapiens

<400> 50
 ataggaaagc ccaccttgac aaaccaggg ctccccaaaa gctgaaaatc tgacagactt 60
 taaacaaccc ccaaataatt atcattccaa caatatctta gtgagctttt tacatctgag 120
 aaagcatggg gtatatattag ttaaataaca cctggtgtag gaatgctttg ggctttgctg 180
 ctttcaaaaa tagtggttat ttcattctgaa attctacttc tagggcacia ctactgaaac 240
 agaaataaga aagagacggg ccagttctta tcatgtttcc atggatttat tggaagatcc 300
 tacatcaagg caaagagcaa tgagtatagc cagtattttg accaacacca tggaaggat 360
 gttaaaagtc ctgcgtcaca gttacttggt gctttcctaa tgatgaaaaa cacttcataa 420
 atttcaataa aatacttctt gacttgatat tgtatcatta ttacacattt tactaaataa 480
 cagtaaaatc cgtgcataac tcatggattc atatattcca cagatttttt ttttttatat 540
 ttagcctgta gaaagctgct gcaaagttaa ggtatatttg aacaccactt tcataactta 600
 a 601

<210> 51
 <211> 645
 <212> DNA
 <213> Homo sapiens

<400> 51
 gcttactagc ctttctgtac tgatcctttc tatgacagca aaccattgt aaaattttcc 60
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 aacctgggtg taatggaccc atttggtgac ctggccatca ccattctgcat tgtcttaaat 360
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 gttggaaacc tggtaagcct cactgagagt ttctcttctt cttgaaagag tttataattg 480
 ccttagtgaa ttttacatat tgctctcaaa ttaaatatca actaattggc catgtatatt 540
 ttgacatcaa atgttttagca tcccttttaa ataacaaaaa aatgttgcta ccatagtgca 600

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<210> 52
<211> 485
<212> DNA
<213> Homo sapiens

<400> 52
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atttaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
ccatattatt actttcaaga aggctggaat atttttgatg gttttattgt gagccttagt 240
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gtaaattaac tgggagtgtt cataaaatgt actttrtaat taattagtct tcattctcat 360
ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaaacaga 420
ttggattgcc ataccaccaa atggtagttt cttcttcac atagctttaa taaagttcac 480
ttaaa 485

<210> 53
<211> 602
<212> DNA
<213> Homo sapiens

<400> 53
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tatataataa taaaataaaa taaaaataaa aataaaaaaa taaaaataaa ataaaattgc 120
agatTTTTTT agaaatgcag agattaacac tgttcttgc tttatttcca gctccgagtt 180
ttcaagttgg caaaatcttg gccaaactcta aatatgctaa ttaagatcat tggcaattct 240
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atgtgcctta ctgtcttcat gatggctcat gtgattggaa atctagtgg atgtagcaaa 540
aacattttcc tcattttcat taaaaataat gtaatcatta aaaagtgttc aactgaagaa 600
ta 602

<210> 54
<211> 803
<212> DNA
<213> Homo sapiens

<400> 54
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tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttctgtctgt 240
gtttcagggt ctgaacctct tcttggcctt gcttttgagt tccttcagtt ctgacaatct 300
tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaag cttttgttag 420
gaagcagaaa gcttttagatg aaattaaacc gcttgaagat cttaaataata aaaaagacag 480
ctgtatttcc aaccatacca ccatagaaat aggcaaagac ctcaattatc tcaaagacgg 540
aatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca ttataaaca accctagcct cactgtgaca gtaccaattg ctggttgaga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaag 720
caaagaggta aaatgttaaa taaggagata ttttggtgta tataatctgt gttaaataatc 780
aggtgtttaa tgcgtgtctc tgt 803

<210> 55
<211> 615
<212> DNA
<213> Homo sapiens

<220>
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<222> (90)..(90)
<223> n = a, c, t or g

<220>
<221> misc_feature
<222> (378)..(386)
<223> n = a, c, t or g

<400> 55
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tggcattatg ttttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg	180
gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgtttttttg	240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat	300
tggagctccc gccgaggag aacagcctga ggttgaacct gaggaatccc ttgaacctga	360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc	420
ctcttttcta cccatttttt cctatttatt taaatgtctg tttatttgtc taccatctag	480
ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat	540
ccaacaactg tacatttatt tgtttttttt ttttgcattt gctgtttgaa aaaaaatgca	600
acgtttttaa ggcaa	615

<210> 56
 <211> 400
 <212> DNA
 <213> Homo sapiens

<400> 56	
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gtaataatgt aaatgaatct cccaccaaca caaatatacc taatcaaaga gtaatttttt	120
gtcttcattt ttttcccaca tatttttagac tgtgtacgga agttcaagtg ttgtcagata	180
agcatagaag aaggcaaagg gaaactctgg tggaatttga ggaaaacatg ctataagata	240
gtggagcaca attgggttoga aaccttcatt gtcttcatga ttctgctgag cagtggggct	300
ctggtaggtg atgcatgac cactccttca cctttcatct gaaatctttt ccctttccct	360
tcaatcaact catattaccc acttttaaat taagggtgtt	400

<210> 57
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 57	
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atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata	120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa	180
aatttaatag aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa	240
accattaaga ccatgttaga atatgctgac aagggtttca cttacatatt cattctggaa	300

atgctgctaa agtggggtgc atatggtttt caagtgtatt ttaccaatgc ctgggtgctgg	360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata	420
tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca	480
gcccaaatat aaattatggt tctcatttca cagtgaagagg atgcctcaaa acatttttta	540
ccaatttaaa tacatataca	560

<210> 58
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 58	
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gcaaggctga actgtgtaga cttttttata tgtaaataag aaaattgtgt tgctttttct	180
gtataggtct cactggttag cttaactgca aatgccttgg gttactcaga acttgggtgcc	240
atcaaattccc tcagaacact aagagctctg aggccactga gagctttgtc ccggtttgaa	300
ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg	360
acacttttga ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact	420
gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcactgctg	480

<210> 59
 <211> 640
 <212> DNA
 <213> Homo sapiens

<400> 59	
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tttgttggtg gcttttcact tatttttcct tctcatcctg tgccagggtg ttgtaaatagc	180
tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggtc	240
aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta	300
caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct	360
cattgagagc aatcaaactg ccagggtgaa aaatgtgaaa gtaaactttg ataacgtagg	420
acttgगतat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt	480
gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgttagaatg	540

gctattatca aacagataaa tgacaataaa tgctggcaag aatgtgaaga aaagggaacc 600
 cttgtacatt gttggcaggg atgtaaatta gtatagcttt 640

<210> 60
 <211> 480
 <212> DNA
 <213> Homo sapiens

<400> 60
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 agcttattta tatgcctgta ttgaatacat gtcaaataga attttgatca attattcaat 120
 ttattttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc 180
 acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta 240
 gttagaggga aattgttttag tttgattaaa tgtatatttc tacaatattg taatttagtg 300
 atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga 360
 taaaatattt aatcatacta tttctttcaa aattatcata ggatgatttt ctctaatac 420
 tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat 480

<210> 61
 <211> 366
 <212> DNA
 <213> Homo sapiens

<400> 61
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 cctgtacatg tatctttatt ttgtcatctt tattatTTTT ggttcattct ttaccttgaa 180
 tcttttcatt ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtatatt 240
 aaaacttcat ccttgctctg aaatatgaac taaatatttc atactctttc ctttagcctc 300
 caaaatgcaa tcaccaaaaa aagaatataa aattcagaaa ttattttgag acatttgata 360
 atcgat 366

<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

<400> 62
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attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt	180
tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttggaggt	240
caagacattt ttatgacaga agaacagaag aaatactaca atgcaatgaa aaaactgggt	300
tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc	360
ctgttaaaac tatattacct aaccgtttca cagcccgaat ttctagaaac tagttatttt	420
tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc ctaaatagct	480
tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat	540
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<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

<400> 63	
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gtttctaata gaacttttac atattatttg ttccagaaca aattccaagg aatgggtcttt	180
gattttgtaa ccaaacaagt ctttgatata agcatcatga tcctcatctg ccttaacatg	240
gtcaccatga tgggtggaac cgatgaccag agtcaagaaa tgacaaacat tctgtactgg	300
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cgttactact atttcactat tggatggaat atttttgatt ttgtgggtgg cattctctcc	420
attgtaggta agaagagggtg cttttattca gttaaggaat atagtggtaa aaatatgtgt	480
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aaatctaata gtccattggt ttagtttttag ttgcccattt ctctaattgc atgctgtgct	600
tgaaatgatg agtggaatac aaggaattta tattttcagc tttcatttat	650

<210> 64
 <211> 3700
 <212> DNA
 <213> Homo sapiens

<400> 64	
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aagctattga cttgtagtgt gttggtgaat gcatgcagga agatgctggt accataaaga	3540
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<210> 65
 <211> 9112
 <212> DNA
 <213> Homo sapiens

<400> 65	
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ctctgtgggc aaaaaaaaaa aaaaaaaaaa aagctgaaca gctgcagagg aagacacggt	180
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atcagagatt atggagcaag aaaactgaag ccaagccaca tcaaggtttg acagggatga	300
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ggcaaaaaga ccctttactc tgtggaaatg gctcagatgc aggccagtgt ccagaaggat	1680
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aathhthth taagthhthc agthhthth tthathhthg tcaathhth tcaaaagth	7260
aathhthth atccathhth gaaathhth tthaaagth thhththgaa thhthhthh	7320

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9112

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<211> 1951
<212> PRT
<213> Homo sapiens

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<223> Xaa = any amino acid

<400> 67

Met Ala Gln Ala Leu Leu Val Pro Pro Gly Pro Glu Ser Phe Arg Leu
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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
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Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
370 375 380

Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr

385	390	395	400
Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val	405	410	415
Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln	420	425	430
Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met	435	440	445
Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala	450	455	460
Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu	465	470	475
Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala	485	490	495
Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu	500	505	510
Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser	515	520	525
Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn	530	535	540
Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu	545	550	555
Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser	565	570	575
Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp	580	585	590
Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg	595	600	605
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn	610	615	620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
805 810 815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr
1055 1060 1065

Glu Glu	Phe Ser Ser Glu Ser	Glu Leu Glu Glu Ser	Lys Glu Lys
1070	1075	1080	
Leu Asn	Ala Thr Ser Ser Ser	Glu Gly Ser Thr Val	Asp Val Val
1085	1090	1095	
Leu Pro	Arg Glu Gly Glu Gln	Ala Glu Thr Glu Pro	Glu Glu Asp
1100	1105	1110	
Leu Lys	Pro Glu Ala Cys Phe	Thr Glu Gly Cys Ile	Lys Lys Phe
1115	1120	1125	
Pro Phe	Cys Gln Val Ser Thr	Glu Glu Gly Lys Gly	Lys Ile Trp
1130	1135	1140	
Trp Asn	Leu Arg Lys Thr Cys	Tyr Ser Ile Val Glu	His Asn Trp
1145	1150	1155	
Phe Glu	Thr Phe Ile Val Phe	Met Ile Leu Leu Ser	Ser Gly Ala
1160	1165	1170	
Leu Ala	Phe Glu Asp Ile Tyr	Ile Glu Gln Arg Lys	Thr Ile Lys
1175	1180	1185	
Thr Met	Leu Glu Tyr Ala Asp	Lys Val Phe Thr Tyr	Ile Phe Ile
1190	1195	1200	
Leu Glu	Met Leu Leu Lys Trp	Val Ala Tyr Gly Phe	Gln Thr Tyr
1205	1210	1215	
Phe Thr	Asn Ala Trp Cys Trp	Leu Asp Phe Leu Ile	Val Asp Val
1220	1225	1230	
Ser Leu	Val Ser Leu Val Ala	Asn Ala Leu Gly Tyr	Ser Glu Leu
1235	1240	1245	
Gly Ala	Ile Lys Ser Leu Arg	Thr Leu Arg Ala Leu	Arg Pro Leu
1250	1255	1260	
Arg Ala	Leu Ser Arg Phe Glu	Gly Met Arg Val Val	Val Asn Ala
1265	1270	1275	
Leu Val	Gly Ala Ile Pro Ser	Ile Met Asn Val Leu	Leu Val Cys

1280		1285		1290
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe				
1295		1300		1305
Ala Gly Lys Phe Tyr His Cys Val Asn Met Thr Thr Gly Asn Met				
1310		1315		1320
Phe Asp Ile Ser Asp Val Asn Asn Leu Ser Asp Cys Gln Ala Leu				
1325		1330		1335
Gly Lys Gln Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn				
1340		1345		1350
Val Gly Ala Gly Tyr Leu Ala Leu Leu Gln Val Ala Thr Phe Lys				
1355		1360		1365
Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asp Val				
1370		1375		1380
Lys Leu Gln Pro Val Tyr Glu Glu Asn Leu Tyr Met Tyr Leu Tyr				
1385		1390		1395
Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu				
1400		1405		1410
Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys				
1415		1420		1425
Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln Lys Lys Tyr				
1430		1435		1440
Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln Lys Pro				
1445		1450		1455
Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp Phe				
1460		1465		1470
Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys				
1475		1480		1485
Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys				
1490		1495		1500

Tyr Met	Thr Leu Val Leu Ser	Arg Ile Asn Leu Val	Phe Ile Val
1505	1510	1515	
Leu Phe	Thr Gly Glu Phe Val	Leu Lys Leu Val Ser	Leu Arg His
1520	1525	1530	
Tyr Tyr	Phe Thr Ile Gly Trp	Asn Ile Phe Asp Phe	Val Val Val
1535	1540	1545	
Ile Leu	Ser Ile Val Gly Met	Phe Leu Ala Glu Met	Ile Glu Lys
1550	1555	1560	
Tyr Phe	Val Ser Pro Thr Leu	Phe Arg Val Ile Arg	Leu Ala Arg
1565	1570	1575	
Ile Gly	Arg Ile Leu Arg Leu	Ile Lys Gly Ala Lys	Gly Ile Arg
1580	1585	1590	
Thr Leu	Leu Phe Ala Leu Met	Met Ser Leu Pro Ala	Leu Phe Asn
1595	1600	1605	
Ile Gly	Leu Leu Leu Phe Leu	Val Met Phe Ile Tyr	Ala Ile Phe
1610	1615	1620	
Gly Met	Ser Asn Phe Ala Tyr	Val Lys Lys Glu Ala	Gly Ile Asp
1625	1630	1635	
Asp Met	Phe Asn Phe Glu Thr	Phe Gly Asn Ser Met	Ile Cys Leu
1640	1645	1650	
Phe Gln	Ile Thr Thr Ser Ala	Gly Trp Asp Gly Leu	Leu Ala Pro
1655	1660	1665	
Ile Leu	Asn Ser Ala Pro Pro	Asp Cys Asp Pro Asp	Thr Ile His
1670	1675	1680	
Pro Gly	Ser Ser Val Lys Gly	Asp Cys Gly Asn Pro	Ser Val Gly
1685	1690	1695	
Ile Phe	Phe Phe Val Ser Tyr	Ile Ile Ile Ser Phe	Leu Val Val
1700	1705	1710	

Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met
1730 1735 1740

Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe
1745 1750 1755

Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro
1760 1765 1770

Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met
1775 1780 1785

Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile
1790 1795 1800

Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
1805 1810 1815

Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met Ala Ser Asn
1820 1825 1830

Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg
1835 1840 1845

Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg Asn Phe Arg
1850 1855 1860

Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser Ser Asn Tyr
1865 1870 1875

Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro Ile Lys Gln
1880 1885 1890

Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr Pro Glu Lys
1895 1900 1905

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
1910 1915 1920

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
1940 1945 1950

<210> 68
<211> 1951
<212> PRT
<213> Homo sapiens

<220>
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<222> (122)..(122)
<223> Xaa = any amino acid

<400> 68

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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala Glu Glu
20 25 30

Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp Glu Asn Lys
35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
145 150 155 160

Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
165 170 175

Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
180 185 190

Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
195 200 205

Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
210 215 220

Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
225 230 235 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
245 250 255

Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
260 265 270

Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
275 280 285

Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
290 295 300

Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
305 310 315 320

Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
325 330 335

Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
340 345 350

Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
355 360 365

Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr

370		375		380
Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr				
385		390		395 400
Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val				
	405		410	415
Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln				
	420		425	430
Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met				
	435		440	445
Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala				
	450		455	460
Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu				
465		470		475 480
Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala				
	485		490	495
Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu				
	500		505	510
Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser				
	515		520	525
Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn				
	530		535	540
Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu				
545		550		555 560
Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser				
	565		570	575
Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp				
	580		585	590
Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg				
	595		600	605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
755 760 765

Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
770 775 780

Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
785 790 795 800

Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
805 810 815

Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
820 825 830

Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
835 840 845

Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
850 855 860

Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
865 870 875 880

Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
885 890 895

Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
900 905 910

Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
915 920 925

Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala
930 935 940

Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
945 950 955 960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
965 970 975

Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
980 985 990

Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
995 1000 1005

Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser
1010 1015 1020

Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu
1025 1030 1035

Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr
1040 1045 1050

Val	Pro	Ile	Ala	Val	Gly	Glu	Ser	Asp	Phe	Glu	Asn	Leu	Asn	Thr
1055						1060					1065			
Glu	Glu	Phe	Ser	Ser	Glu	Ser	Glu	Leu	Glu	Glu	Ser	Lys	Glu	Lys
1070						1075					1080			
Leu	Asn	Ala	Thr	Ser	Ser	Ser	Glu	Gly	Ser	Thr	Val	Asp	Val	Val
1085						1090					1095			
Leu	Pro	Arg	Glu	Gly	Glu	Gln	Ala	Glu	Thr	Glu	Pro	Glu	Glu	Asp
1100						1105					1110			
Leu	Lys	Pro	Glu	Ala	Cys	Phe	Thr	Glu	Gly	Cys	Ile	Lys	Lys	Phe
1115						1120					1125			
Pro	Phe	Cys	Gln	Val	Ser	Thr	Glu	Glu	Gly	Lys	Gly	Lys	Ile	Trp
1130						1135					1140			
Trp	Asn	Leu	Arg	Lys	Thr	Cys	Tyr	Ser	Ile	Val	Glu	His	Asn	Trp
1145						1150					1155			
Phe	Glu	Thr	Phe	Ile	Val	Phe	Met	Ile	Leu	Leu	Ser	Ser	Gly	Ala
1160						1165					1170			
Leu	Ala	Phe	Glu	Asp	Ile	Tyr	Ile	Glu	Gln	Arg	Lys	Thr	Ile	Lys
1175						1180					1185			
Thr	Met	Leu	Glu	Tyr	Ala	Asp	Lys	Val	Phe	Thr	Tyr	Ile	Phe	Ile
1190						1195					1200			
Leu	Glu	Met	Leu	Leu	Lys	Trp	Val	Ala	Tyr	Gly	Phe	Gln	Thr	Tyr
1205						1210					1215			
Phe	Thr	Asn	Ala	Trp	Cys	Trp	Leu	Asp	Phe	Leu	Ile	Val	Asp	Val
1220						1225					1230			
Ser	Leu	Val	Ser	Leu	Val	Ala	Asn	Ala	Leu	Gly	Tyr	Ser	Glu	Leu
1235						1240					1245			
Gly	Ala	Ile	Lys	Ser	Leu	Arg	Thr	Leu	Arg	Ala	Leu	Arg	Pro	Leu
1250						1255					1260			
Arg	Ala	Leu	Ser	Arg	Phe	Glu	Gly	Met	Arg	Val	Val	Val	Asn	Ala

1265	1270	1275
Leu Val Gly Ala Ile Pro Ser 1280	Ile Met Asn Val 1285	Leu Leu Val Cys 1290
Leu Ile Phe Trp Leu Ile Phe 1295	Ser Ile Met Gly 1300	Val Asn Leu Phe 1305
Ala Gly Lys Phe Tyr His Cys 1310	Val Asn Met Thr 1315	Thr Gly Asn Met 1320
Phe Asp Ile Ser Asp Val Asn 1325	Asn Leu Ser Asp 1330	Cys Gln Ala Leu 1335
Gly Lys Gln Ala Arg Trp Lys 1340	Asn Val Lys Val 1345	Asn Phe Asp Asn 1350
Val Gly Ala Gly Tyr Leu Ala 1355	Leu Leu Gln Val 1360	Ala Thr Phe Lys 1365
Gly Trp Met Asp Ile Met Tyr 1370	Ala Ala Val Asp 1375	Ser Arg Asp Val 1380
Lys Leu Gln Pro Val Tyr Glu 1385	Glu Asn Leu Tyr 1390	Met Tyr Leu Tyr 1395
Phe Val Ile Phe Ile Ile Phe 1400	Gly Ser Phe Phe Thr 1405	Leu Asn Leu 1410
Phe Ile Gly Val Ile Ile Asp 1415	Asn Phe Asn Gln 1420	Gln Lys Lys Lys 1425
Phe Gly Gly Gln Asp Ile Phe 1430	Met Thr Glu Glu 1435	Gln Lys Lys Tyr 1440
Tyr Asn Ala Met Lys Lys Leu 1445	Gly Ser Lys Lys 1450	Pro Gln Lys Pro 1455
Ile Pro Arg Pro Ala Asn Lys 1460	Phe Gln Gly Met 1465	Val Phe Asp Phe 1470
Val Thr Arg Gln Val Phe Asp 1475	Ile Ser Ile Met 1480	Ile Leu Ile Cys 1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys
1490 1495 1500

Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val
1505 1510 1515

Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His
1520 1525 1530

Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val
1535 1540 1545

Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys
1550 1555 1560

Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
1565 1570 1575

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg
1580 1585 1590

Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn
1595 1600 1605

Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe
1610 1615 1620

Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala Gly Ile Asp
1625 1630 1635

Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu
1640 1645 1650

Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro
1655 1660 1665

Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp Thr Ile His
1670 1675 1680

Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser Val Gly
1685 1690 1695

Ile Phe	Phe Phe Val Ser Tyr	Ile Ile Ile Ser Phe	Leu Val Val
1700	1705	1710	
Val Asn	Ser Tyr Ile Ala Val	Ile Leu Glu Asn Phe	Ser Val Ala
1715	1720	1725	
Thr Glu	Glu Ser Ala Glu Pro	Leu Ser Glu Asp Asp	Phe Glu Met
1730	1735	1740	
Phe Tyr	Glu Val Trp Glu Lys	Phe Asp Pro Asp Ala	Thr Gln Phe
1745	1750	1755	
Ile Glu	Phe Ser Lys Leu Ser	Asp Phe Ala Ala Ala	Leu Asp Pro
1760	1765	1770	
Pro Leu	Leu Ile Ala Lys Pro	Asn Lys Val Gln Leu	Ile Ala Met
1775	1780	1785	
Asp Leu	Pro Met Val Ser Gly	Asp Arg Ile His Cys	Leu Asp Ile
1790	1795	1800	
Leu Phe	Ala Phe Thr Lys Arg	Val Leu Gly Glu Ser	Gly Glu Met
1805	1810	1815	
Asp Ala	Leu Arg Ile Gln Met	Glu Asp Arg Phe Met	Ala Ser Asn
1820	1825	1830	
Pro Ser	Lys Val Ser Tyr Glu	Pro Ile Thr Thr Thr	Leu Lys Arg
1835	1840	1845	
Lys Gln	Glu Glu Val Ser Ala	Ala Ile Ile Gln Arg	Asn Phe Arg
1850	1855	1860	
Cys Tyr	Leu Leu Lys Gln Arg	Leu Lys Asn Ile Ser	Ser Asn Tyr
1865	1870	1875	
Asn Lys	Glu Ala Ile Lys Gly	Arg Ile Asp Leu Pro	Ile Lys Gln
1880	1885	1890	
Asp Met	Ile Ile Asp Lys Leu	Asn Gly Asn Ser Thr	Pro Glu Lys
1895	1900	1905	

Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser Tyr Asp Ser
 1910 1915 1920

Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys Pro Glu
 1925 1930 1935

Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

<210> 69
 <211> 1380
 <212> DNA
 <213> Homo sapiens

<400> 69
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 gatggattat ttttattttc tttatgtatt gtgtgcttca atatcctaataaataatatt 180
 agctagggtc actgatgtat agaatctttt tctacattta gatatttctt gcaaagtgtt 240
 taccagaaag caacacaaaa atactatcag tgagtatgtg tttacactgt tctctaagga 300
 gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaagggtt tcaaaagact 360
 agagcaggcc acaaggggagc tttcgcaaaa ctctacacgt aaagggtaat gttaaacttaa 420
 aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac 480
 aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaataac 540
 tgaatatgta aaaggctctca tacatattta tatgtagtag ataagttaca ttttttttagt 600
 gtgttgggaa attttagctc acatcacctc tctactgtca tcttggggca ctttcatgac 660
 taccatgct tcatgcagggt ttactttcct ccctgtgaca gaggataatg ggaatgtttt 720
 ttctttggct caattttgtg tgtgtccgcc agtagatggc gtaccacttt gagtgcgac 780
 ggcccttttt tctttctttt tttttttcct caaagctgtt ttctgatata tgttgggtac 840
 catagagtga atctcagaac aggaagcgga ggcataagca gagaggattc tggaaaggtc 900
 tctttgtttt cttatccaca gagaaagaaa gaaaaaaaat tgtaactaat ttgtaaacct 960
 ctgtggtcaa aaaaaaaaaa aaaaaaaaaa gctgaacagc tgcagaggaa gacacgttat 1020
 accctaacca tcttggatgc tgggctttgt tatgctgtaa ttcataaggc tctgttttat 1080
 caggtaagct gacaaaacat ttcattatct gcaccataga acctagctac caggtcattt 1140
 tccttacttt aaaatcatct tcatgctgct atttttaacc cagtgttggt taaatgtaaa 1200

ttacaggaac	caaaggcatc	gtttgatgtg	taaactgctt	actatttctt	tatctttcaa	1260
agaaaataga	gcctgtctgg	aaatggtgat	ttatggtaca	tactaggcat	caatggtctt	1320
gtgtttttgt	agatgcttat	gattaattgt	attcagaaaa	aatatttttt	attatactta	1380

<210> 70
 <211> 840
 <212> DNA
 <213> Homo sapiens

<400> 70	
agggagaac	agaaggatgc
tcaggagtgc	cagcatgcct
tcagaaagac	taaatggatc
	60
aaggctgcc	aagaagggg
agcaccctg	tccaaccct
aggatcctgg	cagtggttcc
	120
tggtoccatt	cttctaaat
catgctaggg	catgctttta
acaagggta	aatatcttgc
	180
tttgcattcat	ccttgctttc
tcgatccagg	gccataaaaa
aaaaaggaat	aaaaccaga
	240
cacagagcca	gagcaccct
atgccaaatg	tcaaagatta
taggctaatt	tcacctgtat
	300
tctctttcta	cagagattat
ggagcaagaa	aactgaagcc
aagccacatc	aaggtttgac
	360
agggatgaga	tacctgtcaa
ggattcatag	tagagtggct
tactgggaaa	ggagcaaaga
	420
atctcttcta	gggatattgt
aagaataaat	gagataattc
acagaaggga	cctggagctt
	480
ttccggaaaa	aggtgctgtg
actatctaag	gtaactaaac
aacttctggg	tataagtttg
	540
tttttgtgga	aaataaacta
aatctcttac	tatttaacaa
ggacagctgt	atcaggacca
	600
aaagaaggca	gaggggtggt
ttcttccttc	ctctaccagt
ttgttcttcc	aaagaggcaa
	660
atacatagag	ggagacatag
cacagatgac	cttagggaat
ggaatgatgc	caaaggctgt
	720
tgatgtaaga	aagagagatt
aactcagttt	tttttttgtt
tttgtttttt	tggtgttgtt
	780
gttggtgttt	tgagacagag
tctctctctg	tcgcccaggc
tggagtgcag	tggcatgaac
	840

<210> 71
 <211> 780
 <212> DNA
 <213> Homo sapiens

<400> 71	
gatatattaa	attttatgta
ttttaataaa	ttataatgtg
catataatca	ttaataatat
	60
atatattcca	caccaaggca
tcagtaagaa	ttaattttta
aagtctgctc	taatgtgaat
	120
ataaaattat	gtaagaactc
tgtataataa	gtcacagag
tacaagaaag	gagaggaaaa
	180
aagtaaaaga	gaactgcgaa
agaactatga	gggatttcca
aacagcaaaa	ttgtcattga
	240

agccatgaga aactctactc actaaattct ttaattttctc agcctaccca aatattgggc	300
aaaccctaata tctcttgagc gggaaaagct gagagtctgg aactagccta tcttccgagg	360
acttagagac aacagtatgg gaatttcaac gagacgtttt tactttcttt tgaccaagat	420
tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt	480
aaaaagtttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga	540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgttattt	600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt	660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga	720
ggctgagaca ggtagatga tacaggcata ccattagcag cagactcaat actaaccag	780

<210> 72
 <211> 1025
 <212> DNA
 <213> Homo sapiens

<400> 72	
acaaagttat gaaaaggcgg ggggcaggat gcagaataat taagcaattt tattgacaaa	60
ctthactggc attactcttt tgctgaaagt atactatatt ttggcttaca gtgtcaaaac	120
agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata	180
taatgtttat atattatata tactgtacat tgtagaatgg ctaaatacaa ctaattaaca	240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat	300
gatgttttca agttcaaatg tgtagtgcag tactaaaagc atgacttaat gtttatagct	360
ttaaaaagtt actaaagaat gacatttttg ttgatgttct tatgcccaat cgcttgcttt	420
cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg	480
taattaaatg tgcaggatga aaagatggca caggcactgt tggtaacccc aggacctgaa	540
agcttccgcc tttttactag agaattctct gctgctatcg aaaaacgtgc tgcagaagag	600
aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat	660
agtgacttgg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg	720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat	780
tttagacttc taataaatct ttaatgaaac tcttaactgt aataactttt tctgggcctt	840
atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt	900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggttac	960

agtcaggaaa tatgaataga tgaatgattt ctacaatttc acagtgataa ttcagatagt 1020
caaaa 1025

<210> 73
<211> 433
<212> DNA
<213> Homo sapiens

<400> 73
tgtaacyata tgtaattta aacatctaac atgtttgtag ttatgatata tcaactgggt 60
taaacaaacc agtttgaaca aacaaattcy attttttaaa aaggtcctca tgtatgtaag 120
ctccttaaata aagcccatgt ctaatttagt aattttactc gtattttctg tttcagactt 180
ttatagtaata gaataaagga aaggcaattt ccgattcag tgccacctct gccttgata 240
ttttaactcc actaaaccct gtaggaaaa ttgctabsaa gattttggta cattcatatc 300
cttttaatgt gaattgccta aatgctattt ctaacagttg attttaaaga aaatgtcagt 360
tatattttca agtatctgta aaatttcttt gagattaatg gtaacattgt tagtttaatt 420
catttatttg cat 433

<210> 74
<211> 450
<212> DNA
<213> Homo sapiens

<400> 74
gagtgcacca aggccatatc acaggctttg aagtttctta ttattttatc attgttttaa 60
aacaaataat attaatttca cagtttttgc atcgataaac ttttttgtgt gttttggatc 120
atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaacct 240
tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
actcaaattc tctagcaatc tccttggtggg tatagcctga cttatggttt ccacttctgt 360
ctaagaaaag ttattttcat aatatgcagc cggttaaggga ggtctttcgg gggagctatt 420
cttctacgag gtaagtattt tcccacaaaa 450

<210> 75
<211> 701
<212> DNA
<213> Homo sapiens

<400> 75

aaaatttacc atttgyggct ttccattaca tttctatcag ataactctgc gctagtaggt	60
caaactagat gattatccat aagatacatg aaactattat tctaaaaccc aaatagttaa	120
accagattag attcctaaag aatatatfff ctcttcagtt taactctttg ctcaggcttg	180
taaaactaac taaatgaata gattatfttg taaatagaag taaggaacaa tattttaatg	240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tftaacagtt	300
caagcaaaat tgttaatfff ggcttggaag tfttctctag gtacacattc actggaatct	360
atacctfttg gtcacttata aaaatcttg caagagggtt ttgcttagaa gattfttacgt	420
ttcttcgtga tccatggaac tggctggatt tcagtgtcat tgtgatggcg tgagtaactt	480
tgaaaatttg ataagcgcaa aggagtgaag atagtcatag tacaacaag gtctfttgtt	540
catatattaa atgtagagct ttcttgfttag tcaagttaac tatatgggtt gtgtatfttc	600
agaatacata ttagaataca tattgcaatg taaatatatc cagtaaatga tcaataaatg	660
gggttatctt catgtcatat agtctftctc tftcatcaaaa t	701

<210> 76
 <211> 286
 <212> DNA
 <213> Homo sapiens

<400> 76	
atttgftaaa ctcacagggc tctatgtgcc aaaccagca ttaagtcctt atttagtata	60
aactftgcca aaactatcag taactctgat ttaattctgc aggtatgtaa cagaattftgt	120
aagcctaggc aatgfttcag cccttcgaac tftcagagtc ttgagagctc tgaaaactat	180
ttctgtaatc ccaggtaaga agaaaactggg gtaaggtagt agggccctta tatctccaac	240
fttftcttggt tgttatftgt tftgtgtgtg aactccctta ttacag	286

<210> 77
 <211> 515
 <212> DNA
 <213> Homo sapiens

<400> 77	
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attgtgtftt tgtgtgaact cccctattac agatatgtga cagagftftgt ggacctgggc	120
aatgtctcag cgfttgagaac attcagagtt ctccgagcac tgaaaacaat ttcagtcatt	180
ccaggtgaga gctaggfttaa acaccgagggt tgactftaat tattgagftt gaaatcaatt	240
tatatgactt acagcattag ccttgfttgc tattattaca gttcatcccg gtaataaatg	300

ccaaatgatg tttcaatgtc agtttagctc ctaaaatfff ataaattaca tgcgtattta	360
taaagtcagc ctttgagttt aacagaaaat tgcagagac atcttcaaaa aatgctaatt	420
tgggcctctt gcgctctctc tctctctttt tcaactaccat ggctttacta acagatttgg	480
atattaccat tcgctgcaga tgtagttcaa aaatg	515

<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

<400> 78	
aaacttcctg actagatatt taaaccttca tattgaatff ccagcaagca cactgttcat	60
gtgtaaaatc tgctgttcat ctatttccca aatcatcagg ctatccatac agctttggtg	120
tctaaatagt caagcaatca tttatggggg aaagagaatg tgtgtgacta ttaagaaatc	180
atgatttctg gcactcttcc tcaggtaacc tatagttctc tctctgcagg tttaaagacc	240
attgtggggg ccctgatcca gtcggtaaag aagctttctg atgtgatgat cctgactgtg	300
ttctgtctga gcgtgtttgc tctcattggg ctgcagctgt tcatgggcaa tctgaggaat	360
aaatgtttgc agtggccccc aagcgattct gcttttgaaa ccaacaccac ttctacttt	420
aatggcacia tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg	480
aaggataaca ttggagatga cagtaagaag tattacatta tgttaacctt agtggtgctg	540
aatgaatfff caactataaa tagt	564

<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

<400> 79	
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tactaatact aatgtgaata ggattaatat gaaataaaat gggttttttt ttgtattaac	120
aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atggttcaga	180
tgcagggtaa gaaacataat atatattttt aagatataga actctttgcy aaaaaaaaaa	240
gtaggtagga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag	300
cagtgtgct cccctaggaa gtgccttgtc tgccttaccg gattgccact ggtcctaaac	360
tcacagcaat taaaaattat ccctttgtga agacctttcc ccaaaatttc acagttaaga	420

tggtcttaaa ttgatgctcc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta	480
tcagagctgt taggaaa	497

<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

<400> 80	
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tctaaatgtc trwaaawatt tatttgcac taaattttct atcggctctc ctagtgaatt	120
tcattctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat	180
aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa	240
ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga	300
aggatacatc tgtgtgaagg ctggtcgaaa cccaactat ggctacacaa gctttgacac	360
ctttagctgg gctttcctgt ctctatttcg actcatgact caagactact gggaaaatct	420
ttaccagttg gtaaggtcca aatgagcatg cataacattt atttttatag acatgtatga	480
aatgaaaagc ataggctgag t	501

<210> 81
 <211> 432
 <212> DNA
 <213> Homo sapiens

<400> 81	
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catacatgat attttttgtc ctggtcattt tcttgggctc attttatttg gtgaatttga	180
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aacaaaaaga ggccgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag	300
ctcagggtact gagtgataaa mgcaaagatt tatcattatt attmtagtt tctaagtaga	360
aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt	420
gtcattagac ac	432

<210> 82
 <211> 489
 <212> DNA
 <213> Homo sapiens

<400> 82
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 gttggaaagt tcttcagaag catcaaagtt gagttccaaa agtgctaaag aatggaggaa 180
 ccgaaggaag aaaagaagac agagagagca ccttgaagga aacaacaaag gagagagaga 240
 cagctttccc aaatccgaat ctgaagacag cgtcaaaaaga agcagcttcc ttttctccat 300
 ggatggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc 360
 tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt 420
 ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag 480
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<210> 83
 <211> 653
 <212> DNA
 <213> Homo sapiens

<400> 83
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 aaaaacactc tttgtactta aatttgcttt aataaaaata tcaaaatata tgtgtcctct 120
 ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc 180
 tttaatatta atatttatta aataattgag ttcttccctt acccccatcc cattcctttc 240
 ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg 300
 caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa 360
 tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact 420
 gtttgtgccg cacagacatg gagagcgacg caacagtaac gttagtcagg ccagtatgtc 480
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 atggtgtggt ttccttggtg ggtggacctt cagctctaac gtcacctact gggcaacttc 600
 cccagagggtg ataatagatg acctagctgc tactgacatt attcaccaat ttg 653

<210> 84
 <211> 566
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

<222> (477) .. (477)
<223> n = a, c, t or g

<400> 84
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tgcaaagaaa tgctatgtgg tgttgattta cttattggga agagtgggtt gagccatcag 180
tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt 240
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ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
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gatcgaacta tatattagac ctaagaatgt gatatatggt gtacattatc acattgntta 480
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atttcaacac ttgatattat atcaat 566

<210> 85
<211> 748
<212> DNA
<213> Homo sapiens

<400> 85
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cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttgtt 180
aaataatgta aaatctacta gcaataataa ctcatTTTTTg ttgttattta ctactcttcc 240
ttgttattgt cctccagaa cttgaagaat ctagacagaa atgtccgcca tgctggtata 300
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gagagataga ccaaagggaa agatgtattt gtgctgtgtt gaacccaaaa attatatcct 600
ctttctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
gtcttaccag ttgtaaactg ctcaaaat 748

<210> 86
 <211> 664
 <212> DNA
 <213> Homo sapiens

<400> 86
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 agtgctgagc tctaattttt taggtcttta ctgggatttt tacagcagaa atggttctca 180
 agatcattgc catggatcct tattactatt tccaagaagg ctggaatatt tttgatggaa 240
 ttattgtcag cctcagttta atggagcttg gtctgtcaaa tgtggaggga ttgtctgtac 300
 tgcgatcatt cagactggta tctatttata tatatccctg tcgctcattg gcacaacatt 360
 tattttgaaa ttgaatcaat gtatatttat ataattatta attttaattt taaatttaca 420
 tcaatatgtg acattctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
 aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacattagaa 540
 aacctacaag tactttctaa aactgtgttt taagtttatg aagctttttt ggccttacag 600
 tctgtaaaga tacgcaaata aaaattttaga cccagttaa ttttagcttt ttattaaccc 660
 tact 664

<210> 87
 <211> 750
 <212> DNA
 <213> Homo sapiens

<400> 87
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 ccacgtgtgg ttctatgata ccacatacta ataaaataat gtctaaaatt atattatgat 180
 tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
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 ctcaccttgg tgttgccat catcgtcttc atttttgctg tggtcggcat gcagctcttt 360
 ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacggtgg 420
 cacatgaacg acttcttcca ctcttctctg attgtgttcc gcgtgctgtg tggagagtgg 480
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atgttgggtca tggtcattgg aaaccttgtg gtatgtatgt agtacaaatg ctcataaatt	600
agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctgggtt	660
atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttattt	720
aacttctcct gggctctggg ttcccatttt	750

<210> 88
 <211> 768
 <212> DNA
 <213> Homo sapiens

<400> 88	
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atagtaagca ttcaataaac atttgttgaa ataatttttag caaagatcta tgagttccct	120
tttttaggctg ttattttaaat gcatattttca atattaarat aggcattttt ctttttttct	180
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ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaaa	300
aggggaattga ttatgtgaaa aataagatgc gggagtgttt ccaaaaagcc ttttttagaa	360
agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata	420
ctggaattga aataagcaaa gagcttaatt atcttagaga tgggaatgga accaccagtg	480
gtgtaggtac tggaagcagt gttgaaaaat acgtaatcga tgaaaatgat tatatgtcat	540
tcataaaciaa cccagcctc accgtcacag tgccaattgc tgttgagag tctgactttg	600
aaaacttaaa tactgaagag ttcagcagtg agtcagaact agaagaaagc aaggaggtaa	660
ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttatttac	720
tattttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt	768

<210> 89
 <211> 471
 <212> DNA
 <213> Homo sapiens

<400> 89	
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ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag	180
ttgatgttgt tctaccccgga gaaggtgaac aagctgaaac tgaacccgaa gaagacctta	240
aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc	300

cttgttcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt	360
gtgggtggctt atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga	420
ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c	471

<210> 90
 <211> 623
 <212> DNA
 <213> Homo sapiens

<400> 90	
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gagtggggaa ggggcaagaa agtttatttt ttcctattta agattaaaat atatttttta	180
attaactata ttttsattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca	240
gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag	300
cacaactggt ttgagacttt cattgtgttc atgatccttc tcagtagtgg tgcattggta	360
agtgaaatgc atattggcaa gaatcagatt ctggtgaaat agtttattct ccaaattac	420
cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct	480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag	540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca	600
tttgcagaga cattctgtaa cca	623

<210> 91
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 91	
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ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac	180
agcgaaagac tatcaaaacc atgctagaat atgctgacaa agtcctttacc tatatatcca	240
ttctggaaat gcttctcaaa tgggttgctt atggatttca aacatatttc actaatgcct	300
ggtgctggct agatttcttg atcgttgatg taagtatttt aagtgatttt tataaaattg	360
tttttaaaag aggcaagttt gacatttcat atgtttctgt tattaaaact ttcactaata	420

atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc	480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg	520

<210> 92
 <211> 595
 <212> DNA
 <213> Homo sapiens

<400> 92	
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attgacacgt gttgataaat atgggcaagt attctggttt cattgggttaa aaaaaagcaa	180
tagtatgaga tgagactggc aatataagat gacccacta tgtggaagat gaaagttgcc	240
aagggtatgtc caaattagta tttagtctgc attaaataga taccacaccc tataccttca	300
gtcaacagtt tatttcttgg tgaactaatt aatttttttt tccttttgta ggtttctttg	360
gttagcctgg tagccaatgc tcttggtac tcagaactcg gtgccatcaa atcattacgg	420
acattaagag cttaagacc tctaagagcc ttatcccggc ttgaaggcat gagggtaaga	480
agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa	540
aagggtgcca tactcttctg atatttattt caatagaaat tacagaatta gaagc	595

<210> 93
 <211> 787
 <212> DNA
 <213> Homo sapiens

<400> 93	
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catactgtag catattttgc tttccttaaa acctagctc tttagttgtg tcattgtttg	120
ttttccttca aatatgtgct agaaaaatta gaagaaacaa cttgtccacc tagattttta	180
tttaactctt ttcaagcaca tattaatact aaacaaatac attgaaggaa tggtttccat	240
tcaaaagggtt tgtaagctat gtccccctcg ctgtctcttc taggtggttg tgaatgctct	300
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aacgggtaac atgtttgaca ttagtgatgt taacaatttg agtgactgtc aggctcttgg	480
caagcaagct cgggtgaaaa acgtgaaagt aaactttgat aatgttggcg ctggctatct	540
tgactgctt caagtggtaa gtggctactg tacgagtttt gaaaaagttt tcaagatgtt	600

tcaaggaaga ttatttcct gatgttcttc gtttgaatga ctaacatttg acagcatgaa	660
aaaaagttaa tgataacacc tataatatca gcttgaattg atcataaaaa agatgttaca	720
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<210> 94
 <211> 438
 <212> DNA
 <213> Homo sapiens

<400> 94	
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tttcatctgg ttaaatgtca ttgttaggtg aaatttttat gaacaattca aatatatgtt	180
atttacaggc cacatttaaa ggctggatgg atattatgta tgcagctgtt gattcacgag	240
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gtaatttaaa cactgatata tccaaaattc tatattagaa catttaatat tgcatataaa	360
aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata	420
tgtagcta atgaaacg	438

<210> 95
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 95	
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actagatcat actagtttta aaaaattggt tttgtagaac aatatctcag ggtaaggcaa	120
aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtatttat	180
agtatttttc atattattta atattttcaa tatcatttag gttaaacttc agcctgtata	240
tgaagaaaat ctgtacatgt atttatactt tgtcatcttt atcatctttg ggtcattctt	300
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<210> 96
 <211> 637
 <212> DNA
 <213> Homo sapiens

<400> 96	
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tttatgtacg taaggatttt gcataatatt aagatattca gaatttcaca taaatgggaa	120
aagcaggata aatgtatatg taggaggata atatccactt aaaaattaga aaagattaaa	180
ggaaagacaa atattttttg tgaaagtact attggaacac agaattgtaa ccagttttat	240
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caatgcaatg aagaaacttg gatccaagaa acctcagaaa cccatacctc gcccagcagt	360
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catattttgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa	540
aaggaggtaa tgttctttat aatttgtgag ttgaaaactt ctagctcagg gttcctaata	600
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<210> 97
 <211> 759
 <212> DNA
 <213> Homo sapiens

<400> 97	
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cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag	180
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atgatggtgg aaacggatga ccagggcaaa tacatgaccc tagttttgtc ccggatcaac	360
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aacactagca tatttgaata aaaactctga aacctgggtt tattcacaaa gctaactagt	660
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<210> 98
 <211> 3975
 <212> DNA
 <213> Homo sapiens

<400> 98	
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24

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18

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<400> 356

ccacgtgtgg ttctatgata cc

22

<210> 357

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20

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 <400> 379
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<210> 380
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<210> 381
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<400> 383
acgcatggct ttggaacat 19

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<400> 384
cccgtatgtg gaagggttt at 22

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<400> 385
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aacggatgac cagggcaa ac 22

<210> 387
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 <400> 387
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 <210> 388
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 <210> 389
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 <210> 392
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<210> 397
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<210> 398
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<210> 401
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 <400> 401
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<210> 402
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<400> 404
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17

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<400> 405
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<400> 408
aaatacrtaa tcgat

15